Department of Defense

HUMAN FACTORS STANDARDIZATION DOCUMENT PROGRAM PLAN

REVISION 5

28 AUGUST 1987

AMSC N/A AREA - HFAC

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The Human Factors Standardization Document Program Plan is approved for implementation by all activities within the Department of Defense. Development and coordination of this plan was accomplished by the United States Army Missile Command. This plan is the fifth revision to the Human Factors Standardization Documentation Program Plan.

It is the responsibility of each identified DoD activity to support the implementation of this plan and provide the resources necessary to complete the identified tasks, within the indicated milestones, as provided for under the Defense Standardization and Specification Program.

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I. EXECUTIVE SUMMARY

A. Scope

The current scope of the Human Factors (HFAC) standardization area includes standardization documents which incorporate human factors engineering (HFE) into the acquisition process. HFE is a comprehensive technical effort to integrate human characteristics (skills, training implications, behavioral characteristics, anthropometric data and biomedical/life support factors) into military systems, equipment and facilities.

The HFAC area is currently composed of twenty-two documents (other than data item descriptions). These documents address a) human engineering/life support; b) color/marking to implement human engineering criteria for readability, legibility, etc; c) acoustic noise limits involving maximum exposure, habitability, communication and aural non-detectability; d) anthropometry, and e) keyboard arrangements. Current issues of the documents are: MIL-H-46855B, MIL-STD-740-1, MIL-STD-740-2, MIL-STD-783D, MIL-STD-1280, MIL-STD-1294, MIL-STD-1295, MIL-STD-1472C, MIL-STD-1473A, MIL-STD-1474B, DOD-STD-1477, MIL-STD-1787, MIL-STD-1794, MIL-STD-1800, DOD-HDBK-743, MIL-HDBK-759A, DOD-HDBK-761, DOD-HDBK-763, SAE HIR-1622, SAE J88-1980, SAE J185-1981, and SAE J925-1984.

B. Purpose

The purpose of this program plan, pursuant to DoD 4120.3-M, is to provide an organized, coordinated approach to integrate all related ongoing projects together with their objectives, purposes, schedules and resources, outlining specified courses of action for resolution of standardization issues. The program plan provides for the development and coordination of new and revised documents and the validation, consolidation or cancellation of existing documents. Individual standardization projects for the HFAC area are identified for implementation. The HFAC Program Plan is a management tool which provides information required for decision making at all levels within the DoD.

This program plan presents time-phased summaries of tasks required to ensure concurrency of HFAC documents with the state-of-the-art, provide non-conflicting correlation with other defense standardization documents while minimizing overlap, overcome voids, and simplify application and tailoring of such documents within the Defense Standardization and Specification Program (DSSP) while maintaining a minimum number of documents. Implementation of this plan should result in overall benefits, including establishment of enforceable requirements, avoidance of unnecessary acquisition costs, improvement of system HFE and, therefore, decreased personnel and support costs.

C. Status and Condition of Standardization Documents

The HFAC standardization area contains a modest number of documents. This condition resulted from carrying out of planned consolidation projects since 1967 which combined and compacted four service tasking documents into a

single tri-service tasking document, four service design criteria documents into a single DoD fully coordinated tri-service standard, thirty-three human engineering DIDs and UDIs into nine DoD DIDs, four Army non-DODISS handbooks into one MIL-HDBK, the data content of forty-four non-DODISS references on military anthropometry into a single DoD handbook, and the material in 7 Navy and Air Force Non-DODISS human engineering procedures guides into a single DoD handbook. HFAC standardization documents are identified by number, revision, title and date, in Table I. HFAC Data Item Descriptions (DIDs) are similarly listed, along with source documents, in Table II.

Condition of HFAC documents, with respect to reference reduction, use of industry documents, non-DODISS document reduction, DID reduction, and metrication are shown below as progress pursuant to initiatives undertaken since the first issue of the HFAC program plan:

Reduction of References/Documents	62%
Enhancement of Industry/Total References	27%
Reduction of non-DODISS/Total References	48%
Reduction of DIDs/Tasking Documents	67%
Percentage of Documents Metricated	93%

This progress, shown graphically program plan-by-program plan, is presented by Figure 1. Inspection of Figure 1 discloses that the most prominent improvement in the condition of HFAC documents since HFAC Program Plan, R4, has been updates of overage documents. Since the initial HFAC Program plan, the mean age of HFAC documents has ranged from 4.1 to 5.7 years. Table I discloses that HFAC documents are now quite up to date if one is willing to relate currency to the latest action. Condition of HFAC documents, on the basis of currency, when measured by mean age of documents at most recent action to March 85 (HFAC Plan, R4) and to March 87 is summarized below:

Document Category	Mean Age (March 85)	Mean Age (March 87)	Age Reduction (HFAC Plan, R4, R5)
DOD HFAC Documents	4.4 Years	2.0 Years	55%
Industry Documents	2.3	2.3	--

D. Problems/Opportunities

1. Structuring of Personnel/Training Tasking Documents & DIDs.

As noted by paragraph I.C., above, the past twenty years have seen considerable consolidation and compacting of human engineering tasking documents. A similar opportunity existed with project HFAC-0009, described in Revisions 1, 2, and 4 of this plan, and follow-on efforts, to accomplish a similar consolidation and reduction of personnel/training documents. A four-step process was envisioned as follows:

a. Identify personnel/training tasking documents on the basis of cited DIDs in the -H category of the AMSDL.

TABLE I. HUMAN FACTORS STANDARDIZATION DOCUMENTS

DESIGNATION	DATE	TITLE
MIL-H-46855B	31 Jan 79	Human Engineering Requirements for Military Systems, Equipment and Facilities
Amendment 1	5 Apr 82	
Amendment 2	5 Apr 84	
MIL-STD-740-1	30 Dec 86	Airborne Sound Measurements and Acceptance Criteria of Shipboard Equipment
MIL-STD-740-2	30 Dec 86	Structureborne Vibratory Acceleration Measurements and Acceptance Criteria of Shipboard Equipment
MIL-STD-783D	18 Dec 84	Legends for Use in Aircrew Stations and on Airborne Equipment
MIL-STD-1280	28 Jan 69	Keyboard Arrangements
Validated	May 82	
MIL-STD-1294A	12 Aug 85	Accoustical Noise Limits in Helicopters
MIL-STD-1295A	26 Jun 84	Human Factors Engineering Design Criteria for Helicopter Cockpit Display Symbology
MIL-STD-1472C	2 May 81	Human Engineering Design Criteria for Military Systems, Equipment and Facilities
Notice 1	1 Sep 83	
Notice 2	10 May 84	
Notice 3	17 Mar 87	
MIL-STD-1473A	10 Feb 76	Standard General Requirements for Color and Marking of Army Materiel
Notice 1	29 Jul 83	
MIL-STD-1474B	18 Jun 79	Noise Limits for Army Materiel
Notice 1	10 Oct 80	
Notice 2	20 Apr 84	
DOD-STD-1477	31 May 83	Symbols for Army Air Defense System Displays
Notice 1	31 Dec 83	
MIL-STD-1787	10 Dec 84	Aircraft Display Symbology
Notice 1	15 Apr 86	
MIL-STD-1794	1 Oct 86	HFE and Management for ICBM Systems
MIL-STD-1800	30 Jan 87	Human Engineering Performance Requirements for Aeronautical Systems
DOD-HDBK-743	3 Oct 80	Anthropometry of US Military Personnel
MIL-HDBK-759A	30 Jun 81	Human Factors Engineering Design for Army Materiel
Notice 1	31 Dec 85	
DOD-HDBK-761	28 Jun 85	Human Engineering Guidelines for Management Information Systems
DOD-HDBK-763	27 Feb 87	Human Engineering Procedures Guide
SAE HIR-1622	8 Mar 85	Noise Control in Fluid Power Systems of Marine Vehicles
SAE J88-1980	18 Nov 85	Sound Measurements - Earth Moving Machinery - Exterior
SAE J185-1970	30 Sep 81	Access Systems for Construction & Industrial Equipment
SAE J925-1984	16 Dec 85	Minimum Service Access Dimensions for Off-Road Machines

TABLE II. HUMAN FACTORS DATA ITEM DESCRIPTIONS *

SOURCE DOCUMENT	DESIGNATION	DATE	TITLE
MIL-H-46855B	DI-H-7051	1 Jun 79	Human Engineering Program Plan
	DI-H-7052	1 Jun 79	Human Engineering Dynamic Simulation Plan
	DI-H-7053	1 Jun 79	Human Engineering Test Plan
	DI-H-7054	1 Jun 79	Human Engineering System Analysis Report
	DI-H-7055	1 Jun 79	Critical Task Analysis Report
	DI-H-7056	1 Jun 79	Human Engineering Design Approach Document-Operator
	DI-H-7057	1 Jun 79	Human Engineering Design Approach Document-Maintainer
	DI-H-7058	1 Jun 79	Human Engineering Test Report
	DI-H-7059	1 Jun 79	Human Engineering Progress Report
MIL-STD-740-1	DI-HFAC-80270	30 Dec 86	Equipment Airborne Sound Measurement Plan
	DI-HFAC-80271	30 Dec 86	Sound Test Failure Notification and Recommendations Report
	DI-HFAC-80272	30 Dec 86	Equipment Airborne Sound Measurements Test Report
MIL-STD-740-2	DI-HFAC-80271	30 Dec 86	Sound Test Failure Notification and Recommendations Report
	DI-HFAC-80273	30 Dec 86	Equipment Structureborne Vibratory Acceleration Measurements Plan
	DI-HFAC-80274	30 Dec 86	Equipment Structureborne Vibratory Acceleration Measurements Test Report
MIL-STD-1294A	DI-H-7130	18 Jan 85	Noise Control Measurement Report (Helicopters)
	DI-H-7131	18 Jan 85	Noise Level Assessment Report (Helicopters)
MIL-STD-1474B	DI-H-1336	29 Jul 80	Report of Noise Test
MIL-STD-1794	DI-HFAC-80240	1 Oct 86	Human Factors Development Plan
	DI-HFAC-80241	1 Oct 86	Human Factors Technical Report
	DI-HFAC-80242	1 Oct 86	Human Factors Design Analysis Report
	DI-HFAC-80243	1 Oct 86	Personnel Planning Report

*Excluding unique data items (UDIs) and data items approved for one year of use.

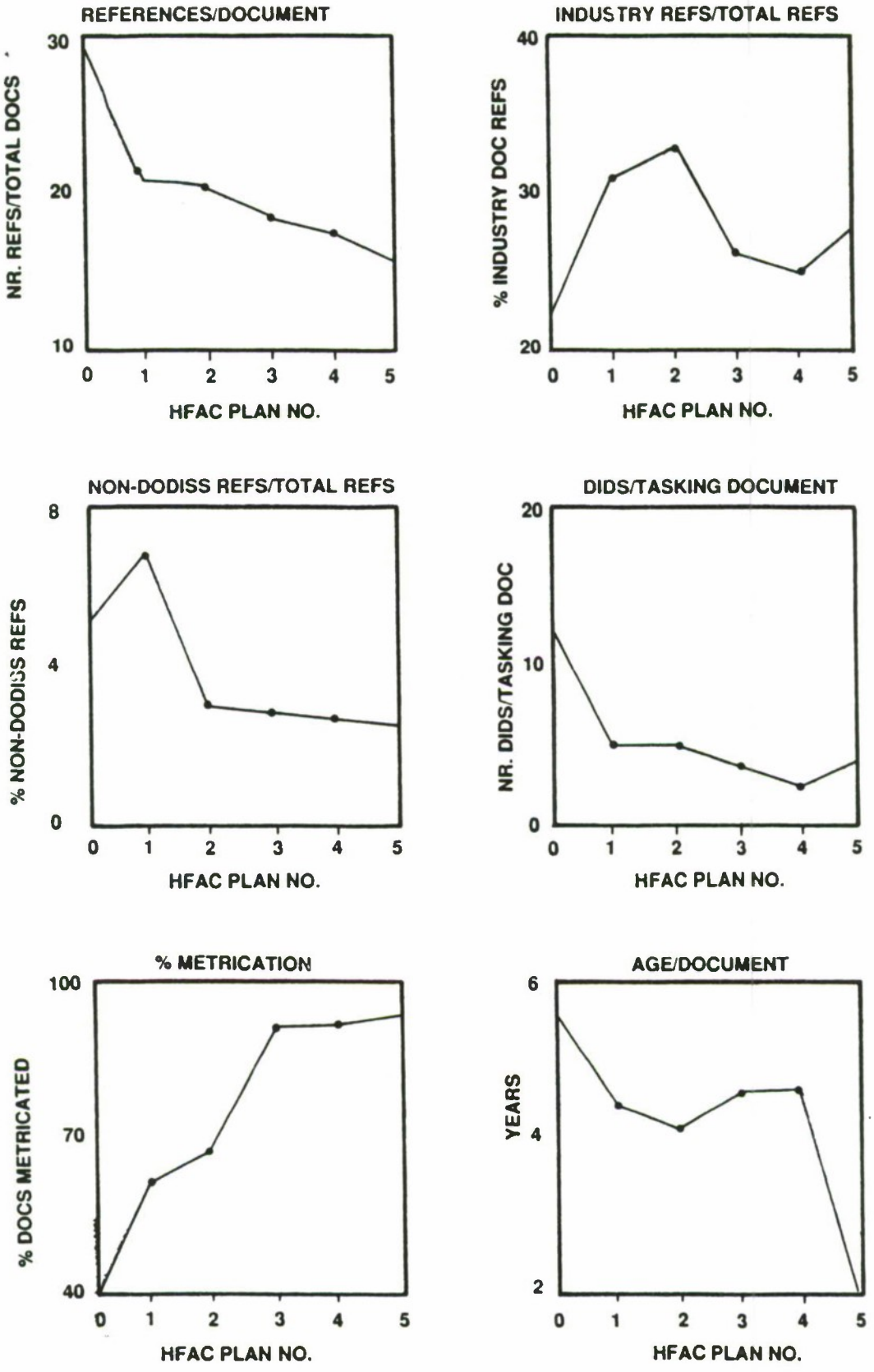

FIGURE 1. HFAC DOCUMENT TRENDS

b. Prepare applicable DODISS tasking documents or new provisions of existing DODISS tasking documents to support a) minimum essential personnel/training data items and b) state-of-the-art practices.

c. Consolidate resulting tasking documents for full coordination.

d. Consolidate data items, where possible.

Since the AMSDL had listed about a hundred DIDs in the personnel/training category of HFAC (-H category DIDs, less human engineering and safety), the potential for consolidation and reduction appeared to be a significant opportunity. HFAC-0009, Personnel and Training Tasking Documents and DIDs Engineering Practice Study, accomplished the first of the above four steps and went somewhat beyond that point in terms of recommended DID cancellations and review actions. Briefly stated, the HFAC-0009 final report, dated October 1985, coordinated after approval of Revision 4 of this Program Plan, recommended:

a. Referral of the 44 DIDs listed in Appendix D to their respective offices of primary responsibility (OPRs) for cancellation.

b. Referral of the 99 DIDs listed in Appendix E to their respective OPRs for review, validation or cancellation.

c. Categorizing all primary Manpower, Personnel and Training (MPT) DIDs under one functional category, either by expanding the HFAC category or by creating a new, separate category for MPT.

d. Retaining current management accountability for DIDs whose primary purpose is other than human factors or MPT (but contain items of MPT data).

e. Undertaking a followup engineering practice study to

(1) Consolidate primary MPT DIDs listed in the report appendices.

(2) Consolidate tasking documents for these DIDs.

(3) Strengthen the linkage between the DIDs and their tasking documents.

Recommendations were generally well received by reviewers with the exception of recommendation c. In addition to some problems surfaced by reviewers with regard to placing MPT DIDs under HFAC or a new MPT area, the recommendation became academic with publication of the 1985 and 1986 issues of the AMSDL and SD-1 which created a new ILSS data category and standardization area containing coverage of MPT.

With the advent of the ILSS data area, the HFAC and ILSS Lead Service Activities (-MI and -WS, respectively) jointly reviewed potential areas of overlap and determined that no change to current scoping was apparent. With

regard to placement of task analysis and workload analysis in HFAC and ILSS areas, it was agreed that (a) task and workload analyses directed toward design of systems and tasks to provide effective personnel/equipment/software interface and to minimize demands on personnel, skills and training should continue to be in the HFAC domain and (b) task and workload analysis directed toward providing manpower, personnel, and training programs in an effective manner, to include personnel selection, training methodology, aptitude requirements, etc., should be undertaken as ILSS interests. A follow-up EPS, to address the consolidation and linkage strengthening recommendations of the HFAC-0009 report and related potential improvements, is now being initated under the HFAC area, with ARI serving as agent to MICOM.

2. Adoption of Industry Standards

Adoption of industry documents can address two needs--first, to adopt available industry publications, rather than to create new government documents; second, to adopt those industry documents already cited by HFAC documents.

In the first category, the HFAC program has adopted two industry documents--ANSI/SAE J185-1970, Access Systems for Construction and Industrial Equipment, adopted September 1981 pursuant to HFAC-0014; and SAE HIR-1622, Noise Control in Fluid Power Systems of Marine Vehicles, adopted 8 March 1985 pursuant to HFAC-0026.

Considering the second category, current HFAC document citations of industry standards are listed in Table III, below:

TABLE III. HFAC DOCUMENT CITATIONS OF INDUSTRY STANDARDS

MIL-STD-1472B	MIL-STD-1473A	MIL-STD-1474B	MIL-STD-740-1
ANSI S1.4	ANSI C95.2	ANSI S1.1	ANSI S1.4
ANSI S1.6	ANSI N2.1	ANSI S1.2	ANSI S1.6
ANSI S3.2	ANSI Y32.16-75*	ANSI S1.4	ANSI S1.10
ANSI S3.5	ANSI Z35.1	ANSI S1.6	ANSI S1.11
ISO 2631	ANSI Z53.1	ANSI S1.8	
ANSI/SAE 925-84*		ANSI S1.10	MIL-STD-740-2
ASTM E380-85*	MIL-STD-1294	ANSI S1.11	ANSI S1.6
		ANSI S1.13	ANSI S1.11
MIL-STD-1280	ANSI S1.1	ANSI S1.21	ANSI S2.2
	ANSI S1.4	ANSI S6.1	
ANSI X3.17	ANSI S1.11	ANSI/SAE J88-80R85*	
	ANSI S1.13	ANSI/SAE J366B-73*	
	ANSI S3.5	ANSI/SAE J986	
	ANSI S6.1	ANSI/SAE J1074	

* Adopted

Note: Titles for the above standards may be found on pp 3 and 45-59.

Inspection of Table III discloses that current HFAC documents contain forty references to twenty-six industry documents. Only five of these documents are adopted industry standards. Since these industry documents have been cited, in many instances, for over ten years, and no problems regarding their use have been observed, it is reasonable to assume that the adoption process can be undertaken without significant technical controversy.

Projects for adoption of fifteen of these industry standards appear on the Task Sheets of Section IV. Preparing activities for documents citing the industry standards or custodians/review activities having requested use of such industry standards have been selected to serve as coordinating activities. To date, only four HFAC adoption projects have been completed. Such adopted documents are shown at the end of Table I. ASTM E380-85 and ANSI/SAE J366B-73 do not appear in Table I since they were adopted in the MISC Area and 6625 FSC, respectively.

3. Availability of HFAC Documents. - This problem, reported in the 3rd revision of this plan, seems to have moderated to some extent although it still exists. This moderation is likely a result of various military agencies and contractors reportedly continuing to print their own copies of documents such as MIL-STD-1472.

E. Identified Tasks Which Cannot be Accomplished due to Disagreements Between Participants or Resource Constraints

1. General. - No current tasks are being impaired from the standpoint of disagreements or resource constraints. There have been, from time to time, delayed starts on technical efforts (e.g., HFAC-0008, HFAC-0009) as a function of mission/funding/personnel availability. This is a general problem, not specific to any program or project, and has its roots in administrative constraints on funds and mission priorities. The problem is evident in phases of technical analysis and preparation actions which occur prior to formal coordination actions. The HFAC program will likely have to live with these conditions, using the mechanism of schedule extension or cancellation/restart as the most cost-effective means of accomplishing initiatives. As a noteworthy point, this problem has not resulted in many delinquent projects to date--a function of a number of participants in various efforts essentially donating their time to the tasks at hand and cancellation of programs before they become delinquent. Historically, about 90% of all HFAC projects started are completed as planned.

2. Adoption of Industry Standards. - While paragraph D.2 presents an opportunity to adopt industry standards which have appeared to prove non-controversial over many years of use, only 19% of the industry documents listed in Table III have been adopted. Adoption of industry standards, cited by HFAC documents, was initially explored by Revision 1 of this Program Plan, 19 Dec 79. At that time, specific projects were planned and milestone charts constructed for completing sixteen adoption actions by the end of FY83. Revision 2 of the Program Plan, 3 Aug 81, noted that no adoption projects previously planned had been completed. All milestones were then removed from the adoption tasks since it was felt that no useful purpose would be served by revising the schedules of the tasks, adding others, then repeatedly revising them. By the time Revision 3

of the HFAC Program Plan was issued, 12 Aug 83, only two standards cited by HFAC documents had been adopted. This plan noted that a five year period was considered to be a reasonable duration to accomplish adoption projects for nineteen industry standards while permitting preparing activities sufficient flexibility to incorporate these efforts within balanced work programs. Accordingly, Aug 88 completion milestones were shown for all adoption projects. Currently, only five of the industry documents cited by HFAC documents have been adopted and only two other industry documents have been adopted by the HFAC area. While some progress is being made in this area, the chances of meeting the 1988 milestones for a substantial number of these documents is remote indeed.

F. Conditions Which Preclude Achieving a Practical Degree of Standardization. - Past actions have striven to achieve a minimum number of coordinated documents and, as noted by paragraph I.C., above, resulted in merging four individual service specifications into one coordinated specification, four individual service standards into one DoD standard, eleven individual service handbooks into two MIL-HDBKs, and 33 individual service Data Item Descriptions (DIDs) into nine coordinated DIDs. This excellent progress now appears to be compromised by solutions to initiatives in other areas as follows:

a. Avoidance of Non-DODISS References. - Policies over the past several years have discouraged use of Non-DODISS references in contracts and in DODISS documents themselves. For example, paragraph II.B.4.c reports HFAC area progress in this regard. The desire to reduce or eliminate such Non-DODISS documents as references has resulted in reported refusals by some in responsible charge of assembling RFP's to cite agency documents. This action, in turn, has led to elevation of such agency documents to MIL-STD status. Considerable duplication of existing HFAC documents by a new DODISS document was required so that minimum human factors engineering requirements could be accepted for inclusion in RFP's. This required action resulted in generation of MIL-STD-1794 which supplanted one or two SAMSO standards and, as noted by the preparing activity, reflects a tailored version of MIL-H-46855 and DID's. Accordingly, the HFAC area now has an additional human engineering tasking document and four additional DIDs, used by one office for one product line. Clearly, the policy to avoid non-DODISS references, resulting in upgrading agency documents to DODISS Documents, is incompatible with the policy to minimize the number of documents and data items in an area for tri-service use.

b. MIL-PRIME. - The MIL-PRIME program has added one document (MIL-STD-1800) to the HFAC inventory.

c. Commercial Procurement. - A number of initiatives have recently been set in motion to emphasize commercial procurement. Accordingly, NAVSEA personnel are actively supporting an effort to develop a set of national shipbuilding standards, giving priority to those standards that will result in cancellation of one or more existing Navy documents or fill a need where no specification or standard exists. Such documents are being developed as ASTM standards for application to commercial and auxiliary type ships. A draft human engineering standard, strongly resembling MIL-STD-1472 has been drafted; however, it is not clear how much refinements and revisions would have the ASTM standard depart from MIL-STD-1472; however, it is assumed that the ASTM standard

could delete some of the less critical MIL-STD-1472 material and be applied to military sealift and auxiliary vessel procurement, while MIL-STD-1472 would continue to be used for combatant vessel development. The innovation would seem to offer an interesting mechanism for facilitating commercial procurements at the expense of expanding the number of (HFAC) documents. It is also not clear at this point if, alternatively, voluntary standards body adoption of a MIL-STD (with exceptions) for commercial procurements would provide a more practical approach. In any event, the initiative will be monitored and reported in the next revision (R6) of this HFAC Program Plan.

In summary, the above initiatives focus on reducing non-DODISS document citations in RFPs, promoting use of performance oriented and easy-to-tailor specifications and standards, and enhancing commercial procurement methods; however, they do create additional documents, to be used by only one subordinate organization or office, on one product line.

G. Progress Made Compared to Goals Established in the Program Plan.

See Table IV.

H. Resources Expended and Required

Resources expended and required, estimated by project, are summarized by Table V. The scope of Table V includes those projects completed subsequent to Revision 4 of this plan, as well as projects under way or planned. Resources expended on projects completed prior to Revision 4 of this Plan are not included. Resource figures are expressed to reflect technical support (analysis, review and preparation) and standardization actions (formal coordination, administration and management). The figures, necessesarily, do not reflect resources allocated to routine processing and review/comment actions by review activities.

I. Principal Conclusions

1. The principal tasking document used by the Department of Defense to prescribe Human Engineering Requirements for Military Systems, Equipment and Facilities, MIL-H-46855B, conforms to the intent of prevailing DoD policies and practices, with the minor exception of not using military standard format or listing of DIDs in the document.

2. In 1979 the number of human engineering DIDs related to MIL-H-46855 as a tasking document was reduced almost 75%. Accordingly, in the human engineering portion of the HFAC area, the current DIDs appear to represent the minimum number of essential requirements. Further reduction would be counter-productive. In other HFAC disciplines six non-unique DIDs dealing with noise testing and reporting are contained in the AMSDL--three for MIL-STD-740-1, two for MIL-STD-1294A and one for MIL-STD-1474B. These also appear to reflect minimum essential requirements.

3. Actions involving manpower, personnel, and training (MPT), exclusively for the acquisition of logistics support, now fall appropriately in the ILSS Area. Potential problems regarding possible overlap and scoping have been resolved without any problem.

TABLE IV. PROGRESS VS GOALS OF HFAC PROGRAM PLAN, REV 4

TASK NR.	HFAC#	SUBJECT	MILESTONE	GOAL	ACTUAL
H1-84-2	F002	MIL-STD-1794	Complete	Dec 85	Dec 86
H1-85-1	0027	Human Engineering Procedures Guide EPS	Complete	Jun 86	Jun 8[illegible]
H1-86-1	0031	DOD-HDBK-763, Hum Engr Procedures Guide	Complete	Sep 87	Feb 8[illegible]
H2-83-3	0019	Keypad Arrangements EPS	Complete	Sep 86	Nov 8[illegible]
H2-83-4	0020	Keyboard Arrangements EPS	Complete	Sep 86	
H2-83-7	0024	DOD-HDBK-761	Complete	Jun 85	Ju[illegible]
H2-85-3	A014	MIL-HDBK-759A, Notice 1	Complete	Dec 85	[illegible]
H2-86-1	0030	MIL-STD-1472C, Notice 3	Complete	Sep 87	Mar [illegible]
H2-86-2	F004	MIL-STD-1787, Notice 1	Complete	Mar 86	Mar 86
H2-87-1	0032	MIL-STD-XXXX Phys Ear Noise Atten Testing	Initiate	Sep 86	Sep 86
H2-87-2	F005	MIL-STD-1800	[illegible]omplete	Feb 87	[illegible]
H3-80-3	0029	SAE J88	Adoption	Sep 87	Nov 85
H3-80-7	0028	SAE J925	Adoption	Sep 87	Dec 85
H3-81-10	0016	MIL-STD-1294A	Complete	Sep 8[illegible]	Aug 85
H3-85-2	N003	MIL-STD-740-1	Complete	Jun 86	Dec 86
H3-85-3	N004	MIL-STD-740-2	Complete	Jun 86	Dec 86
H5-84-1	0009	P&T Task Documents/DIDs EPS	Complete	Mar 86	Mar 86

Goals reflect milestones as specified by the DD Form 1585 for each.

TABLE V. RESOURCES EXPENDED & REQUIRED (MAN-MONTHS)

TASK	HFAC PROJECT NUMBER	EXPENDED TECH	EXPENDED STZN	REQUIRED TECH	REQUIRED STZN
H1-84-2	F002	12	1	-	-
86-1	0031	3	1	-	-
87-1	0013	12	-	2	2
87-2		6	-	1	1
H2-80-5	0028	1	2	-	-
83-3	0019	2	1	-	-
83-4	0020	6	2	-	-
83-7	0024	3	2	-	-
83-9	A012	1	1	-	-
85-1	F003			-	-
85-3	A014	2	1	-	-
86-1	0030	2	1	-	-
86-2	F004	1	1	-	-
87-1	F005	30	1	-	-
87-2		4	-	4	1
H3-80-1		-	-	1	2
80-2		-	-	1	2
80-3	0029	1	2	-	-
80-5		-	-	1	2
80-6		-	-	1	2
80-8		-	-	1	2
81-1		-	-	1	2
81-2		-	-	1	2
81-3		-	-	1	2
81-4		-	-	-	2
81-5		-	-	-	2
81-6		-	-	-	2
81-7		-	-	-	2
81-8		-	-	-	2
81-9		-	-	-	2
82-1		-	-	1	2
82-2		-	-	1	2
83-1		-	-	1	2
85-1		4	-	6	1
85-2	N003	6	1	-	-
85-3	N004	6	1	-	-
86-1	0032	2	2	-	-
87-1	0035	-	-	0	2
H4-84-1	0027	12	1	-	-
H5-84-1	0009	5	1	-	-
87-1	0036	-	-	48	2

4. Initiatives to eliminate non-DODISS documents from RFP's and HFAC DODISS documents, prepare MIL-PRIME documents, and implement efforts to emphasize commercial procurements, are starting to impair achieving a practical degree of standardization, if such can be defined as a minimum number of DoD standardization documents and DIDs. Since the last revision of this plan, these initiatives have resulted in a 10% and 19% increase in the number of HFAC documents and DIDs, respectively.

5. Actions on human engineering documents are, essentially, on schedule.

6. Efforts to adopt industry standards, cited by HFAC documents, require attention.

J. Recommendations

1. The HFAC Program should proceed as planned.

2. The Lead Standardization Activities for the HFAC and ILSS areas should coordinate any apparent overlap that may arise between human engineering and MPT coverage when and if required, consistent with current scoping.

3. Coordination and adoption of industry standards currently cited by HFAC documents should be completed by the time HFAC Program Plan R6 is prepared. Applicable activities should emphasize these actions.

4. Individual subordinate commands, responsible for one product line, should be permitted to prescribe agency non-DODISS documents for their contracts, rather than elevate such documents to MIL-STD status, since such organizations author and stock such documents and can readily make them available as exhibits to all offerors.

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SECTION II. SUMMARY OF COORDINATED PROGRAMS

A. OVERVIEW OF PROGRAM

This Subsection is divided into four portions as follows:

-Completed Projects. - Projects completed after Revision 4 of the Human Factors Standardization Program (HFAC) Plan, approved 21 Aug 85. Since summaries of such projects constitute final reports, these projects do not appear in the Section IV task sheets or schedules.

-Discontinued Projects. Projects cancelled after HFAC Plan, R4.

-Continuing Projects. - Projects initiated pursuant to individual Task Sheets in prior issues of the HFAC Plan, but not yet completed.

-New Projects. - Projects initiated after Revision 4 if the HFAC Plan and not completed, or projects to be initiated pursuant to this revision of the HFAC Plan.

Each portion of this section is arranged in HFAC category sequence as follows:

H1: Human Engineering Tasking Documents

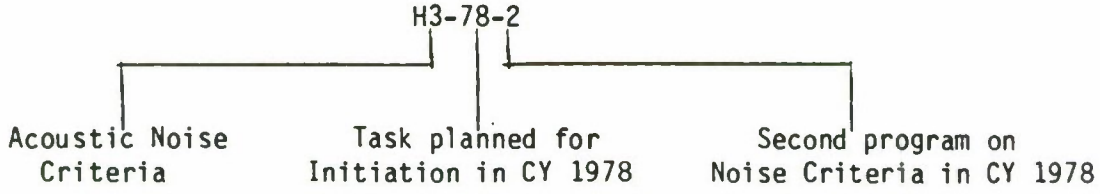
H2: Human Engineering Design Criteria & related

H3: Acoustic Noise Limits

H4: HFAC Management, General Reviews & related

H5: Personnel/Training Tasking Documents

Each effort is identified here and in Sections IV and V by a task code, consisting of three hyphenated numbers representing a) HFAC Category, b) calendar year initiated and c) the number of the project within its category for that calendar year. For example:



1. COMPLETED PROGRAMS

H1-84-2 Human Factors Engineering and Management for Intercontinental Ballistic Missile (ICBM) Systems — HFAC-F002

The purpose of this project was to provide a tasking document to supersede SAMSO-STD-77-1, Human Factors Engineering for Intercontinental Ballistic Missile Systems and SAMSO-STD-68-9, Personnel Subsystem Specification. A limited coordination ICBM HFE tasking document was developed in Military Standard book format that included descriptions of the data resulting from HFE tasks such that tasks and data could be tailored for application in given statements of work. The project was initiated the third quarter of FY84 and with BMO (AF-14) as Preparing Activity. In FY85-86 the need for this document was reassessed by BMO, the HFSSC and the Lead Standardization Activity on the basis of the HFAC document structure, metrication, paperwork reduction act, citation of non-DODISS documents, limited application, duplication, and other factors. In early 1986 actions were taken to address questions regarding format, structure, metrication, and other administrative issues, leaving only consideration of need for the document and its data items vs duplication/proliferation issues. While these issues were being considered by the Lead Standardization Activity and HFSSC, BMO advised the Lead Standardization Activity and HFSSC that DMSSO had approved the standard and data items as MIL-STD-1794 and DI-HFAC-80240-80243, respectively. The project was completed with promulgation of the standard and DIDs on 1 Oct 86.

H1-85-1 Human Engineering Procedures Guide EPS — HFAC-0027

This EPS defined material for structuring as a proposed MIL-HDBK, containing procedures, task options, requirement background and techniques for accomplishing tasking and data preparation performed pursuant to MIL-H-46855B and its related data item descriptions. The objective of this approach was to provide guidance available in a readily accessible form without compromising the integrity or tailorability of MIL-H-46855. The material was developed from guides sponsored by Navy and Air Force and was designed to accommodate needs of all the Services. The EPS was performed under contract to the U.S. Army Missile Command. NAVSEA and AAMRL provided participation to the HEL Detachment-MICOM which served as Preparing Activity's Agent. This project, forecast for 1984 initiation by Revision 3 of this Plan, and postponed until 1985 for fiscal reasons, was initiated and completed in the fourth quarter of FY85 and the third quarter of FY86, respectively. The product was used as a coordination draft of proposed DOD-HDBK-763, HFAC-0031.

H1-86-1 DOD-HDBK-763, Human Engineering Procedures Guide — HFAC-0031

This project was undertaken to formally coordinate the Human Engineering Procedures Guide defined under Task H1-85-1. The project was initiated 11 Jul 86, formal coordination was started and completed 29 Aug and 28 Nov 86, respectively, and the handbook was approved and submitted for promulgation as DOD-HDBK-763 on 27 Feb 87. The U.S. Army Missile command is preparing activity, Naval Air Systems Command and Aeronautical Systems Division (AFSC) are Navy and Air Force custodians, respectively, and the HEL Detachment-MICOM serves as agent to MICOM for technical content and maintenance.

H2-80-5 Minimum Service Access Dimensions for Off-Road Machines HFAC-0028

The purpose of this project was to adopt SAE J925 (Oct 84). The project was initiated during the fourth quarter of FY85 and completed 16 Dec 85, with The Belvoir RD&E Center serving as the Military Coordinating Activity and HQ, USMC, designated as Navy Custodian.

H2-83-3 Numeric Keypad Arrangements Engineering Practice Study HFAC-0019

As an outgrowth of a suggestion to standardize numeric keypad configurations, AMC directed that an EPS be undertaken on keypad/keyboard arrangements, and that MIL-STD-1280 be revised, as applicable. MIL-STD-1280 was transferred from FSC 7430 to the HFAC Area, 18 Aug 81, pursuant to HFAC-0017. On 13 Jul 82, Project Number HFAC-0019 was assigned by the lead service activity for the EPS, identifying the U.S. Army Human Engineering Laboratory as Agent, as requested by -CR. The EPS was directed at establishing a standard numeric keypad layout for inclusion in MIL-STD-1280. An extensive literature search was conducted to define a preferred layout for inclusion in the standard. The EPS was initiated during the second quarter of FY83, an EPS report was submitted by HEL during the first quarter of FY86, and the project was concluded by -CR the first quarter of FY87, essentially endorsing the "telephone" layout for most keypad applications and for inclusion in MIL-STD-1280.

H2-83-4 Keyboard Arrangements HFAC-0020

This EPS was directed at identifying MIL-STD-1280 data voids, establishing their priorities for resolution, and defining program plans to produce the required design criteria to satisfy priority data voids. This project began in Feb 1984. The U.S. Army Human Engineering Laboratory, serving as Agent for -CR, submitted the final EPS report the first quarter of FY86. Findings will be used by -CR to drive an initial revision of MIL-STD-1280.

H2-83-7 Human Engineering Guidelines for Management Information Systems HFAC-0024

Section III, Other Related Actions, of Revision 3 of this Program Plan reported that the U.S. Army Human Engineering Laboratory (HEL) had completed preparation of these guidelines. This was an extensive treatment of a specific application of user-computer interface which is increasing in interest and importance to the services. The guidelines were published in 1982 as a joint publication of the AMC Management Information Systems Directorate and HEL. After a comment and revision cycle, completed in FY84, the guidelines were submitted for publication as an AMC Engineering Design Handbook. At that time, alternative preparation as a MIL-HDBK was considered by the AMC Engineering Design Handbook Advisory Group (EDHAG), the User/Computer Interaction subgroup of the DoD HFE TAG (U/CI STAG) and Tri-Service Human Standardization Steering Committee (HFSSC). As a result of favorable consideration by the EDHAG, U/CI STAG and HFSSC, HFAC-0024 was initiated the first quarter of FY84 to update subject guidelines as a DOD-HDBK. A coordination draft DOD-HDBK was prepared by

Research Triangle Institute (RTI), under contract to the Army Management Engineering Training Activity (AMETA) which served as Agent to MICOM, the Preparing Activity. Formal coordination was conducted from August through October 1984. The final draft was completed the third quarter of FY85 with submission of DOD-HDBK-761 for approval and subsequent publication.

H2-85-3 Human Factors Engineering Design for Army Materiel HFAC-A014

The objective of this task was to prepare a change notice for MIL-HDBK-759A to reflect changes to criteria for weight-lifting/carrying, update the Coburn-Forster-Kane equation for predicting carboxyhemoglobin blood levels and incorporate other changes that have been received from various sources since publication of the "A" revision. The HEL Detachment-MICOM served as Agent for MICOM, the preparing activity, for preparation and technical content of the change notice which was completed the first quarter of FY86.

H2-86-1 MIL-STD-1472C, Human Engineering Design Criteria for Military Systems, Equipment and Facilities HFAC-0030

The purpose of this project was to prepare Change Notice 3 to MIL-STD-1472C on the basis of inputs from service and industry users since release of Change Notice 2. These inputs were structured into a consolidated summary by the HEL Detachment-MICOM on 9 Jan 86 and supplemented 21 Mar 86. All comments were reviewed by the Tri-service Technical Group for MIL-STD-1472 (with Service, AIIE, EIA, HFS and NSIA representatives participating) on 5 May 86. The U.S. Army Missile Command initiated the Change Notice preparation project on 11 Jul 86 and started formal coordination on 12 Sep 86. Coordination comments were resolved on 9 Feb 87. MICOM approved and submitted the change notice for promulgation on 17 Mar 87. The HEL Detachment-MICOM served as Agent to MICOM and was responsible for preparation of technical content and resolution of coordination inputs.

H2-86-2 MIL-STD-1787, Aircraft Display Symbology HFAC-F004

This action was limited to preparing Notice 1 to MIL-STD-1787, a MIL-PRIME, incorporating a distribution statement. The project was simultaneously initiated and completed by -11 on 4 Mar 86, Notice 1 was approved and promulgated on 15 Apr 86.

H2-87-1 MIL-STD-1800, Human Engineering Performance Requirements for Aeronautical Systems HFAC-F005

As an initiative under the MIL-PRIME program, described in Section III, ASD has, since the previous HFAC Plan, prepared the above human engineering MIL-PRIME, consisting of sections on environment, anthropometry, maintainability, controls, visual displays, and audio displays. This project was completed the second quarter of FY87 with publication of MIL-STD-1800, dated 30 Jan 87.

H3-80-3 Sound Measurement - Earthmoving Machinery - Exterior HFAC-0029

The purpose of this project was to adopt SAE J88 (Sep 80) R85. The project was initiated during the fourth quarter of FY85 and was completed 18 Nov 85,

with the Belvoir RD&E Center serving as the Military Coordinating Activity and the Naval Construction Battalion Center designated as Navy Custodian.

H3-85-2 Airborne Sound Measurements and Acceptance Criteria of Shipboard Equipment — HFAC-N003

This project was initiated to develop a new draft of MIL-STD-740-1 and data items as a result of extensive comments received from circulation of the material developed pursuant to H3-80-10. The project was started the third quarter of FY 85 with estimated completion the fourth quarter of FY 87. Preparing activity is -SH.

H3-85-3 Equipment Structureborne Vibratory Measurements and Acceptance Criteria of Shipboard Equipment — HFAC-N004

This project was initiated to develop a new draft of MIL-STD-740-2 and data items as a result of extensive comments received from circulation of the material developed pursuant to H3-80-11. The project was started the third quarter of FY 85 with estimated completion the fourth quarter of FY87. Preparing Activity is -SH.

H5-84-1 Personnel and Training Tasking Documents/DIDs Engineering Practice Study — HFAC-0009

The objective of this task was to formulate recommendations for: Deletion of DID references which are not germane; DID and/or tasking document restructuring for mutual compability; preparation of DODISS tasking documents where none exist to serve as a basis for minimum essential data; incorporation of relevant requirements in existing DODISS documents to serve as bases for minimum essential data; cancellation of DIDs where warranted; or retention of tasking document/DID relationships where essential needs are supported. This report also contained recommendations for a follow-on effort to consolidate primary MPT DIDs, consolidate tasking documents for those DIDs, and strengthening the linkage between the DIDs and their tasking documents. While preliminary work on this EPS was started in July 1983, formal initiation during the second quarter of FY84 was approved in December 1983. Naval Air Development Center (Code 6022) served as Agent for the Preparing Activity--US Army Missile Command--with Army and Air Force participation coordinated by the US Army Research Institute for the Behavioral and Social Sciences and Air Force Systems Command, respectively. The EPS was completed September 1985 and coordination with affected organizations was completed in March 1986.

2. DISCONTINUED PROGRAMS

None.

3. CONTINUING PROGRAMS

H3-85-1 MIL-STD-1474C (Proposed), Noise Limits for Military Ground Materiel — HFAC-

Since the last revision of MIL-STD-1474 in June of 1979, there has been an accumulation of proposed changes and additions, the most extensive being in the areas of aural non-detectability and blast overpressure measurement. Since MIL-STD-1294, Acoustical Noise Limits in Helicopters, is fully coordinated with Navy and Air Force Custodians and the standard calls out MIL-STD-1474 for impulse noise, Navy and Air Force concurrence with impulse noise provisions from MIL-STD-1474 is implied. It is deemed appropriate at this juncture to pursue full coordination. The HEL Detachment-MICOM will serve as Agent for MICOM, the Preparing Activity, with Navy and Air Force participation. Initiation and completion are planned for the first and fourth quarters respectively, of FY 87.

4. NEW PROGRAMS

H1-87-1 Task Analysis — HFAC-0013

All services use "task analysis" in the design and development of new systems and the training and logistic support for those new systems. Although there is a vast literature on task analysis and there are a variety of contract data item descriptions entitled "task analysis," there had been, until 1984, no uniform definition of "a task" let alone what an analysis of it should look like. This lack of uniformity frequently makes the undertaking of a "task analysis" by a contractor an unpleasant effort. Because of lack of uniform guidance on the content of a "task analysis," some of the contractor submissions to the military services are over-detailed (and therefore unecessarily expensive); some are under-detailed (and therefore of little use). Moreover, different functions (e.g., design, training, test and evaluation, manning, maintenance) within the same Service working on the development of the same new system do not now work with the same "human performance task" data base.

The Department of Defense Human Factors Engineering (HFE) Technical Advisory Group (TAG), chartered by the Assistant Secretaries (R&D) of the Army, Navy, and Air Force, has organized a number of sub-TAGs to address critical areas within the HFE technology. One of these groups, the Tri-service Human Factors Test and Evaluation (HFTE) sub-TAG, has, through a series of meetings, ad hoc committees, individual study efforts and liaison with personnel in training and maintainability functions, determined that it is possible to prepare a single tasking document, setting forth a single scheme for conducting and reporting of task analysis. This single scheme will permit needed flexibility from system-to-system and function-to-function, but will eliminate the unnecessary duplications and provide contractors a stable conceptual framework for the performance of task analysis for all DoD procurement.

By early 1980, pursuant to task H1-79-1, the HFTE sub-TAG (STAG) completed preparation of an agreed-to-task taxonomy and initiated a working draft of a proposed tasking document on task analysis. The output of this committee was to have been structured as a proposed military standard, including data items, for full coordination, issue, and subsequent reference by other DODISS documents

requiring task analysis. It was intended that this effort should provide, for the first time, a unified, comprehensive, tailorable statement regarding the conduct of task analysis which can be used on a multi-service, multi-product, and multi-discipline basis.

By late 1980, the HFTE STAG, having carefully assessed progress, drew the following conclusions:

1. The past had seen many approaches to preparing and using task analyses. Some users found the products unsatisfactory.

2. Considerable work had already been accomplished, on the draft military standard, pursuant to HFAC-0013. Agreement had been reached on task taxonomy and definitions. A document structure had been prepared and reviewed. Candidate task analysis data item descriptions had been prepared and found to require more effort.

3. There are many users and ways of using the products of task analyses; therefore, there is a need to coordinate with such users regarding such considerations as content, form of results, need to provide data amenable to computer processing, etc. More users should assess what has been done on the task analysis standard to date.

4. More work needs to be done to clearly define which requirements should be imposed on contractors and which should be forthcoming from the Services, service-peculiar needs and needs beyond task descriptions. It is clear that the Services dictate missions and scenarios while contractors set many requirements and allocate many functions.

The HFTE STAG recommended that they should continue to work on this effort in an informal way since unavailability of time and funds to support the work precludes those participating from undertaking such technical commitments on an expedited or comprehensive basis. It was clear, by November of 1980, that the (then) current schedule could not be met. Accordingly, by agreement between the HFTE STAG Chairman and the preparing activity, the project was cancelled. It was also agreed that a new project should be requested as such time as the content of the draft standard represents a consensus of the HFTE STAG.

Following this agreement the task taxonomy, developed by the HFTE STAG, was integrated into MIL-H-46855B as amendment 2 on 5 April 1984, following formal coodination pursuant to HFAC-0023 and reported in the last revision of this plan. Immediately following adoption of this common terminology by MIL-H-46855B, the U.S. Army Human Engineering Laboratory (HEL), building on the work by the HFTE STAG, further developed, under contract, a preliminary draft MIL-STD on task analysis. The product was received by HEL in December of 1985 and subjected to review and refinement within HEL during 1986. HEL then provided the draft standard to the HFTE STAG which reviewed the technical content of the document and also agreed that it was suitable for the purpose intended.

In May 1986, while these reviews were underway, the HFSSC requested that the HFTE STAG consider the possibility of a sectionalized MIL-H-46855 with task numbers provided for task analysis (and other project efforts). In October 1986,

the HFTE STAG reaffirmed preparation of a stand-alone document on task analysis on the bases of specifying requirements in detail without encumbering the very generally written MIL-H-46855, providing material relevant to technical communities additional to human engineering (the subject of MIL-H-46855), not desiring to cause major rewrites of two documents (MIL-H-46855B and DOD-STD-763), accommodation of occasional needs for task analyses without other provisions of MIL-H-46855, and providing material in a form that could be reconsidered for integration into MIL-H-46855 at a later date if necessary.

By November of 1986, the draft standard and data items were provided to the Tri-service Human Factors Standardization Steering Committee (HFSSC) to consider submission for formal coordination. The new standard would supplement or replace the task analysis provisions in MIL-H-46855B and DI-H-7055. The preliminary draft was submitted to the U.S. Army Missile Command in Feb 87 for structuring and formatting the material to conform to prevailing policies. The draft was subsequently circulated for formal coordination, with the Army Missile Command serving as preparing activity and Naval Air Systems Command and Aeronautical Systems Division (AFSC) serving as Navy and Air Force custodians respectively, pursuant to project HFAC-0013. The project was initiated in April 1987 and is scheduled for completion April 1988.

H1-87-2 Human Engineering Requirements for Measurement and Analysis of Operator Workload — HFAC-00

Human Engineering Requirements for measurement and analysis of operator workload are currently limited to only one sentence in MIL-H-46855B. This extremely general provision is clearly insufficient to express reasonably detailed requirements for measurement, analysis, modeling, information and other tasking and data needs during acquisition programs.

As noted on the previous pages addressing task analysis, the DOD HFE TAG, chartered by the Assistant Secretaries (R&D) of the Army, Navy and Air Force, organized a number of sub-TAGs to address critical areas within HFE technology. One of these groups, the Operator Workload sub-TAG (STAG) has, through a series of meetings, individual study efforts, and liaison with practicing human factors professionals experienced in workload measurement and analysis, determined that a tasking document, subject as above, is needed and that the state of the art is sufficiently defined to permit preparation of such a document. Accordingly, during the past several years, the Armstrong Aerospace Medical Research Laboratory, in conjunction with the Workload STAG, has developed a draft standard which has undergone several iterations of internal review and fine tuning by AAMRL and the Workload STAG to a point where it is ready for coordination.

As with the standard on task analysis, those responsible for preparation of the technical content of the workload standard, carefully evaluated the possibility of integrating provisions into MIL-H-46855B, rather than preparing a stand-alone document, and rejected the possibility for similar reasons. A compelling basis for focusing on a stand-alone document, advanced by the Workload AST STAG, additional to the rationale of the HFTE STAG, was that integration of the workload, task analysis and possibly U/CI material into a sectionalized MIL-H-46855 would have to wait until the last discipline's draft is ready,

thereby creating excessive delay or, if incorporated in phases, would create several needless iterations of MIL-H-46855 revisions and coordination actions.

While the draft standard was prepared as an Air Force Limited Coordination document, current plans are focused on full coordination on the basis that if the standard is reasonably suitable for Tri-service use and can be accepted for that purpose, it would eliminate any plans for service-peculiar documents and thereby maintain a minimum number of tasking documents (and data requirements) within this HFE discipline.

The Aeronautical Systems Division, AFSC, will serve as preparing activity with AAMRL acting as agent for technical content and resolution of comments. The Army Missile Command and Naval Air System Command are envisioned as custodians. Project initiation and conclusion are scheduled for the fourth quarters of FY87 and 88, respectively.

H2-87-2 MIL-STD-1472, Human Engineering Design Criteria for Military Systems, Equipment and Facilities HFAC-

The purpose of this project is to prepare MIL-STD-1472D, centered around two areas--updates of design for maintainability and, possibly, user/computer interface provisions. Several years ago, the Pacific Missile Test Center (PMTC) undertook, by contract, a review of maintainer requirements in U.S. Navy Aircraft and Acquisition, included a critical review of section 5.9 of MIL-STD-1472C from the user's viewpoint. A report of findings was prepared, 30 Jun 83, by McDonnell Douglas Astronautics Company. Based on these findings, Xyzyx Information Corporation, under contract to PMTC, prepared 30 June 1984, a proposed refinement and update to section 5.9 of MIL-STD-1472C. During 1986, the recommended refinement was assessed by the Tri-service Technical Group for MIL-STD-1472 and structured into a proposed section change. The draft has already been reviewed by the technical group and will be included as part of a proposed "D" revision of MIL-STD-1472 as soon as possible after conclusion of Project HFAC-0030. State-of-the-art user-computer interface guidelines such as those recently developed for ESD by MITRE Corporation, as ESD-TR-86-278, are currently being evaluated by the Armstrong Aerospace Medical Research Laboratory to identify additional criteria suitable for inclusion in section 5.15 of the standard. Any resulting updating U/CI criteria will be considered for inclusion in MIL-STD-1472D if available during the time frame of project initiation, currently planned for September 1987.

H2-87-3 Keyboard Arrangements HFAC-

The recommendation from HFAC-0019 to adopt the "telephone" numeric keypad layout for general applications will be reflected in MIL-STD-1280 as a change notice, containing suitable application caveats. Initiation and final draft milestones are envisioned as the third quarter of FY87 and second quarter of FY88, respectively. Preparing activity is -CR.

H2-88-1 Keyboard Arrangements HFAC-

The engineering practice study, performed under HFAC-0020, to identify MIL-STD-1280 data voids, establishing priorities for resolution, recommending

fixed function key layout, and establishing program plans for addressing remedial action was concluded in 1986. Followup will be directed toward preparing a preliminary draft revision of MIL-STD-1280. It is not clear at this point if this preparation would be accomplished as an additional EPS or as a first step in a revision project. Preparing activity is -CR.

H3-81-4 Preferred Reference Quantities for Acoustic Levels HFAC-0033

This project was to have been initiated in December 1984 to adopt ANSI-S1.8 which is referenced by MIL-STD-1474B, but is not an adopted industry standard. Contact with ANSI by the coordinating activity (MICOM), pursuant to initiating this effort, disclosed that this industry standard was in the process of being updated and that adoption should consider the revised version when approved. As a result, initiation was scheduled for the 2nd quarter of FY87 to coincide with the completion milestone forecast for ANSI S1.8. Continued contact with ANSI by -MI disclosed that completion of the S1.8 revision had not been completed by the end of the third quarter of FY87. Accordingly, the project was cancelled on 7 July 1987, but will be reinitiated when the ANSI S1.8 revision action is completed.

H3-81-5 Calibration of Microphones, Method for the HFAC-0034

This project is planned for initiation the first quarter of FY86 to adopt ANSI S1.10 which is referenced by MIL-STD-1474B, but is not currently an adopted industry standard. Contact with ANSI by the coordinating activity (MICOM), pursuant to initiating this effort, disclosed that S1.10 is in the process of revision. Status is the same as for ANSI S1.8, described above as task H3-81-4.

H3-86-1 MIL-STD-XXXX, Physical Ear Noise Attenuation Testing HFAC-0032

Establishment of methodology and instrumentation requirements for quality assurance testing of hearing protective devices for noise attenuation characteristics is needed. Accordingly, a project was initiated by the Natick Research and Development Center (GL) in September 1986 to prepare and coordinate a military standard addressing that need. The Naval Air Systems Command (AS) and Aeronautical Systems Division (11) have been designated as custodians. Completion of the effort is planned for September 1987.

B. SIGNIFICANT STANDARDIZATION ISSUES

The Human Factors (HFAC) Standardization Area consists of twenty-two documents, excluding data item descriptions. It is important to understand that only one specification (MIL-H-46855B) and one standard (MIL-STD-1794) are considered as program tasking documents. A few others contain performance/design criteria and testing provisions; thereby placing them in the category of tasking documents by virtue of test actions and reporting. The remainder are not tasking documents, but are performance and design criteria standards and guidelines and would appear to fall outside the realm of "cost driver," "non-product document," "rules document," "Tasking Source Document," and related appellations.

For the most part, HFAC documents generally fit the definition of product documents since they establish and define essential requirements for products; however, they are necessarily treated as "non-product documents" because of the need to maintain an HFAC standardization area and because they specify only some characteristics--not all performance and physical characteristics of a specific product. The documents are categorized below:

Program Tasking	Validation, Tasking, Performance/Design Rqmts	Performance/Design Rqmts
MIL-H-46855	MIL-STD-740-1	MIL-STD-783
DOD-HDBK-763*	MIL-STD-740-2	MIL-STD-1280
MIL-STD-1794	MIL-STD-1294	MIL-STD-1295
	MIL-STD-1474	MIL-STD-1472
		MIL-STD-1473
		DOD-STD-1477
		MIL-STD-1787
		MIL-STD-1800
		DOD-HDBK-743
		MIL-HDBK-759
		DOD-HDBK-761
		SAE HIR-1622
		SAE-J88
		SAE-J185
		SAE-J925

*Guidance only.

An overview of salient standardization issues is condensed by Table VI. Details and additional issues are explored below:

1. Sectionalization. - Many standardization document formats present tasking requirements in a manner which makes it difficult for selection and application of individual requirements. In order to facilitate selective application and tailoring, the need to reformat and sectionalize new and revised standards, as required, must be addressed. The primary tasking document within the HFAC Area is MIL-H-46855B. DOD and industry groups, at a meeting convened to address sectionalization and related issues (Application/Tailoring Baseline Workshop, Airlie, VA, 17-19 Jan 78), agreed that MIL-H-46855 should not be sectionalized by acquisition phase or other

TABLE VI
OVERVIEW OF CURRENT HFAC DOCUMENTS

Document	Referenced Documents DODISS	INDUST	Non-DODISS	Nr HFAC DIDs	Metrication	Pro-Forma Plan	Selection & Application
MIL-H-46855B	1	-	-	9	N/A	No	Application Tailoring Guide as Appendix
MIL-STD-740-1	7	4	-	3	M (C)	No	Solicits exceptions to equipment specification with proposals, to improve equipment noise levels.
MIL-STD-740-2	9	3	-	2	M (C)	No	Solicits exceptions to equipment specification with proposals, to improve equipment noise levels.
MIL-STD-783	-	-	-	-	N/A	No	Self tailored by application
MIL-STD-1280	1	1	-	-	N/A	No	Formatted by types and classes.
MIL-STD-1294	3	6	-	2	M (C)	No	Formatted by aircraft weight.
MIL-STD-1295	4	-	-	-	N/A	No	See MIL-STD-1472C.
MIL-STD-1472C	42	9	3	-	M (C)	No	Selection/Application per OMB Circular A-109 and DODD 5000.43. Self tailoring (provisions only as applicable.)
MIL-STD-1473A	50	5	-	-	C	No	Formatted by commodity for use as applicable.
MIL-STD-1474B	5	14	1	1	M (C)	No	Formatted by system characteristic. Application guide appears in Appendix with details to be specified by the procuring activity (tailoring)
DOD-STD-1477	-	-	-	-	M	No	Self-tailored by application.
MIL-STD-1787	5	-	-	-	M & C	No	MIL-PRIME
MIL-STD-1794	5	-	-	4	N/A	No	Application/Tailoring Guide in Appendix - Sectional
MIL-STD-1800	8	0	1	-	N/A	No	MIL-PRIME
DOD-HDBK-743	*	-	*	-	M	No	Guidance only. Data Source.
MIL-HDBK-759	*	*	*	-	M	No	Guidance only or as cited for specific applications.
DOD-HDBK-761	*	*	*	-	M	No	Guidance only or as cited for specific applications.
DOD-HDBK-763	*	*	*	-	N/A	No	Guidance only or as cited for specific applications.
SAE HIR 1622	-	-	-	-	M	No	Adopted Industry Standard
SAE J88-1980	-	-	-	-	M	No	Adopted Industry Standard
SAE J185	-	-	-	-	M	No	Adopted Industry Standard
SAE J925-1984	-	12	-	-	M	No	Adopted Industry Standard
TOTALS:	140	54	5	21			

Notes: N/A: Not Applicable; C: Customary; M: Metric; ( ): Equivalents; *: None other than bibliographic source credits or Documents cited only for guidance, not compliance

application breakdown. It was agreed that its "analysis-design-test" format was more conducive to application and tailoring by acquisition phase than by repetitive sectionalization. Accordingly, a cooperative effort yielded an application and tailoring guide, which currently appears as an appendix.

In May 1986, the HFSSC requested that the Human Factors Test & Evaluation sub-TAG (HFTE STAG), Workload Coordinating Committee (WCC) and the User/Computer Interaction (U/CI) STAG of the DOD HFE TAG consider the possibility of a sectionalized MIL-H-46855 with task numbers provided for task analysis, human engineering requirements for measurement and analysis of operator workload, and U/CI analytic/design/test functions. In October 1986, the HFTE STAG, WCC and U/CI STAG reaffirmed preparation of stand-alone documents in these areas on the bases of specifying such requirements in detail without encumbering MIL-H-46855, providing material relevant to technical communities additional to human engineering, desiring not to cause major rewrites of two documents (MIL-H-46855B and MIL-H-XXX Human Engineering Procedures Guide), accommodating occasional needs to specify those tasks in detail without other requirements of MIL-H-46855, and avoiding excessive delay by waiting until the latest available provisions in these three areas is ready for integration into MIL-H-46855 (or causing three update projects if done in sequence) in addition to providing material that could be reconsidered for the integration into a sectionalized MIL-H-46855 at a later date, if necessary. Reviews for sectionalization will continue.

MIL-STD-1794 is sectionalized by function.

The preliminary draft standard on "Human Engineering Requirements for Measurement and Analysis of Operator Workload (see H1-87-2) is sectionalized by task.

Format and tailoring implications of HFAC documents are noted in the far right column of Table VI.

2. Metrication. - DoDD 4120.18, "Use of the Metric System of Measurement," emphasizes the conversion of development of specifications, standards and other general purpose technical data to the metric system. A target date of 1 January 1990 has been established for availability of a complete spectrum of metric specifications and standards. The metric system of measurement, when used in HFAC documents, will be the International System of units (SI), in accordance with FED-STD-376.

With only one exception, all HFAC documents using a system of units have been metricated (see Table VI). Metrication will be applied to MIL-STD-1473A during the next revision. Progress measurement, expressed as a percentage of documents using the metric system vs total number of documents expressing any system of units, is shown below:

HFAC Plan Rev	Nr Metric Documents*	Using System of Units	% Metric
0	2	5	40%
5	14	15	93%

* Includes metric and dual system (see Table VI)

3. Pro-Forma Plans. - To avoid promulgation of documents requiring a contractor to submit a plan as part of the proposal, it is necessary to review each document covered by an area program plan to ensure that it does not contain such requirements which are properly part of the contract. While it is noted that MIL-STD-740-1 contains a suggestion in the notes section that certain lists and an outline be requested in proposals, no HFAC document requires submission of such pro-forma plans.

4. References. - Progress in minimizing references by HFAC documents, promoting use of industry documents, and eliminating non-DODIS references is summarized by Table VI and analyzed in more detail below:

a. Total References. - Of the 199 references by current HFAC documents, about half are cited by MIL-STD-1472C and MIL-STD-1473A. Revision and validation tasks on MIL-STD-1472B and MIL-STD-1473A, respectively, during 1980 and 1981, included reviews of these references on the bases of need and avoidance of blanket citations. Revision of MIL-STD-1472B resulted in a reference decrease of only three documents; however, such citations were limited to applicable provisions of referenced documents. Because several documents were added to the HFAC area since Revision 4 of this plan, the total number of referenced documents actually increased slightly. Since the number of documents within the HFAC area is subject to change, the most reasonable approach to measuring progress with regard to referenced document reduction would appear to consider average number of references per document, excluding MIL-HDBKs from the document count since they are not typically cited by contracts for mandatory compliance. Progress, measured this way is shown below:

HFAC PLAN REV	NR REFS	NR DOCS	REFS/DOC	% REDUCTION
0	147	5	29.4	
5	199	18	11.1	62%

b. Non Government Standards and Specifications. - Current HFAC documents cite 27 industry standards via 40 citations. Only six of these industry documents are listed in the DODISS as adopted industry standards (ANSI Y32.16, SAE J88, SAE J366, SAE J185, SAE J925, and ASTM E380-85). This problem will be addressed during the next five years and is reflected by specific tasks in Section IV herein. These industry documents are identified in paragraph D.2 of this section. As a result of implementing Revision 2 of this program plan the number of industry standard citations by HFAC documents was increased by seven--primarily a result of adding MIL-STD-1280 and 1294 to the HFAC Area. In view of collateral striving to reduce the total number of references, the most appropriate measure of industry document use would seem to be the proportion of referenced documents which are industry documents. Progress, measured this way, is shown below:

HFAC PLAN REV	IND DOC REFS	TOTAL REFS	% IND DOCUMENTS
0	32	147	22%
5	54	190	28%

c. Non-DODISS References. - A review of non-DODISS references was completed pursuant to task H4-79-1, Project HFAC-0008, HFAC Associated Document Engineering Practice Study, as delineated in and reported by Revisions 1 and 2, respectively, of this plan. As a result the number of Non-DODISS documents referenced by HFAC documents was decreased from 7 to 4. These remaining non-DODISS citations are listed below:

CITING DOCUMENT	CITED DOCUMENT
MIL-STD-1472C	BUMEDINST 6260.6, "Hearing Conservation Program."
MIL-STD-1472C	AFR 161-35, "Hazardous Noise Exposure."
MIL-STD-1472C	"Human Engineering Guide to Equipment Design."
MIL-STD-1474B	Acoustica, 1964, 14, 24-35.
MIL-STD-1800	AFSC DH 1-3, "Human Factors Engineering."

Citations of the BUMEDINST and AFR are currently required to implement DODI 6055.3, Hearing Conservation. As a result of the engineering practice study undertaken pursuant to standardization project HFAC-0007, the Navy agreed to participate in the next coordination of MIL-STD-1474. Should such coordination be undertaken, BUMEDINST 6260.6 could be dropped from subsequent issues of MIL-STD-1472 in favor of MIL-STD-740 and MIL-STD-1474 citations.

The Human Engineering Guide to Equipment Design is cited solely to provide procedures for applying a modified rhyme test for speech intelligibility. The "Guide" is possessed by most Defense contractors and is readily available from the US Government Printing Office.

Acoustica is cited strictly in support of the definition of average hearing. It is not cited in the requirements section of MIL-STD-1474B.

AFSC DH 1-3 is cited as guidance by MIL-STD-1800, which is a MIL-PRIME, heavily subjecting DH 1-3 to tailoring and providing ready availability of the document to offerors, since both DH 1-3 and MIL-STD-1800 are prepared by ASD.

Citation of four of the non-DODISS documents will be addressed during the next revisions of MIL-STD-1472 and MIL-STD-1474.

Progress in reducing non-DODISS citations can be expressed as percentages of total referenced documents, as shown below:

HFAC PLAN REV	NON-DODISS REFS	TOTAL REFS	% NON-DODISS REFS
0	7	147	4.8%
5	5	199	2.5%

5.- Data Item Descriptions

a. Within HFAC Scope. - The HFAC area contains only 21 data item descriptions (DIDs). These are listed in Table II and, for the most part, are DIDs resulting from tasking contained in MIL-H-46855B, MIL-STD-1794, and from noise measurement reporting. Current DIDs are considered as minimum essential requirements. The most reasonable approach to measuring accomplishments with regard to DID reduction/consolidation would appear to consider the average number of DIDs per tasking document. Progress, measured this way, is shown below:

HFAC PLAN REV	NR DIDS	NR TASK DOCS	DIDS/TASK DOC	% REDUCTION
0	39	3	13.00	
5	21	6	3.5	73%

The above chart excludes a) unique DIDs (UDI's), b) one-year use DIDs, and c) personnel and training DIDs which erroneously cite HFAC documents in block 9.

b. Other. - Review of all non-unique data item descriptions (DIDs) in the Acquisition Management Systems and Data Requirements Control List (AMSDL) for the HFAC Program Area, Appendix D, disclosed that a number of DIDs are not human factors. This is largely an artifact of human factors, training and safety having originally been combined and using the "DI-H" designator.

c. Analysis. - An analysis of HFAC DIDs is presented by Table VII.

d. Conclusions.

(1) At least half the documents (tasking documents or DIDs) in the HFAC Program Area Listing of the AMSDL are non-DODISS, or non-HFAC documents, or do not relate to the tasking documents cited.

(2) Since publication of the last AMSDL revision, a new HFAC standard has been generated, two HFAC standards have replaced one standard, five new DIDs have replaced five old DIDs and four new DIDs have been generated. Implementation of recommendation (1) below, will result in reduction of tasking documents from 16 to 6 and reduction of DIDs from 31 to 21 in the HFAC listing of the AMSDL.

e. Recommendations:

(1) Removal of tasking documents, DIDs and UDIs from the HFAC Source Documents listing in the AMSDL, as recommended by the analysis in Table VII, should be accomplished as soon as possible.

(2) The OPR's for the DIDs, recommended by Table VII for deletion from the HFAC Source Documents listing of the AMSDL, should evaluate those DIDs for cancellation.

f. Other Required Actions. - Each HFAC tasking document shall identify, possibly in section 6 or in an appendix, all contract data requirements by reference to the corresponding DID. As existing HFAC tasking documents are updated or revised, the use of existing DIDs or development of new DIDs will be considered if appropriate. The HFAC preparing activities are responsible for the content of contract data requirements.

6. Adoption of Existing Equivalent Non-Government Standards and Specifications. - The HFAC standardization program is focused on adoption of 28 industry documents which are already cited by HFAC documents. (See paragraph 4b, above, and adoption projects in Section IV.) Emphasis is on use and adoption of industry documents and avoidance of preparation of military specifications and standards. Consolidation is not a viable option in view of the limited number of HFAC documents, current lack of overlap and, in many instances, military-peculiar nature of the documents themselves.

TABLE VII. ANALYSIS OF HFAC DATA ITEM DESCRIPTIONS (DIDS)

DOCUMENT & DID	OPR	DOC DATE	REMARKS	RECOMMENDATIONS
MIL-H-46855B(2)	-MI	05 Apr 84	A current HFAC Document.	No change
DI-H-7051 thru DI-H-7059	-MI	01 Jun 79	Current HFAC DIDS.	No changes
UDI-H-22274B		01 Jul 76	Not clear how a 1976 DID can use a 1979 tasking document as its basis.	Designate proper tasking document. Delete from page I-63 of the AMSDL
UDI-H-25561	-TD	15 Dec 75	Not clear how a 1975 DID can use a 1979 tasking document as its basis. Appears to involve 69GP (Training Aids & Devices)	Delete from page I-63 of the AMSDL
MIL-STD-740B(1)	-SH	22 Jun 85	Superseded by MIL-STD-740-1 & MIL-STD-740-2.	Delete from page I-63 of AMSDL
UDI-T-23756	-SH	01 Apr 72	Superseded by DIDs pursuant to projects HFAC-N003 and HFAC-N004. See page 35.	Delete from page I-63 of AMSDL.
UDI-T-23760	-SH	01 Apr 72		
UDI-T-23764	-SH	01 Apr 72		
MIL-STD-1294A	-AV	12 Aug 85	A current HFAC document.	No change.
DI-H-7130	-AV	18 Jan 85	Current HFAC DIDs.	No change.
DI-H-7131	-AV	18 Jan 85		
MIL-STD-1333A(1)	-AS	21 Nov 77	No DIDs shown. FSC 1500	Delete from page I-63 of the AMSDL.
MIL-STD-1472C(2)	-MI	10 May 84	A design criteria, not a tasking document.	Delete from page I-63 of the AMSDL.
UDI-E-22128A		29 May 74	OPR's of the UDIs are not the PA's of the document.	Delete as products of MIL-STD-1472 tasking. Consider use of DI-H-7056 in place of UDI-E-22128A, and transfer of UDI-E-25561 to reflect
UDI-H-22274B	-EC	01 Jul 76		
UDI-E-25561	-TD	15 Dec 75		

Table VII. ANALYSIS OF HFAC DATA ITEM DESCRIPTIONS (DIDS) (Continued)

DOCUMENT & DID	OPR	DOC DATE	REMARKS	RECOMMENDATIONS
				appropriate tasking document. MIL-H-46855B is already designated as the tasking document for UDI-H-22274B since 3.2.3(2) specifies testing to determine conformance with human engineering design criteria. If ANSI S3.2 (Monosyllabic Word Intelligibility, Method for Measurement of) were adopted, it could be evaluated as a tasking/rules document for this UDI which calls for a speech intelligibility test report. (See H3-80-1)
MIL-STD-1474B(2)	-MI	20 Apr 84	A current HFAC document.	No change.
DI-H-1336			A current HFAC DID.	No change.
AFR 161-2		08 Jun 70	Not a DODISS document. No DID listed thereunder.	Delete from page I-63 of the AMSDL.
AFSC DH 1-3(1)	-11	01 Jan 77	Not a DODISS document.	Delete from page I-63 of the AMSDL.
DI-H-3253	-10	24 Aug 70	Manpower & Personnel. Page I-66 of the AMSDL also ties this DID to MIL-D-26239A in ILSS Area.	Delete from page I-63 of the AMSDL.
DI-H-3721	-10	21 May 71	Training DID. Also appears in AMSDL under ILSS on page I-92.	Delete from page I-63 of the AMSDL.
NAVMED P5010-5	-10	10 Oct 72	No DIDs listed. Not a DODISS document.	Delete from page I-64 of the AMSDL.
SAMSO R 127-7	-14	24 May 73	Not a DODISS document.	Delete from Page I-64 of the AMSDL.
DI-S-30562A	-14	20 Jan 83	Safety DID. Appears on page I-181 of the AMSDL under SAFT	Delete from Page I-64 of the AMSDL.

Table VII. ANALYSIS OF HFAC DATA ITEM DESCRIPTIONS (DIDS) (Continued)

DOCUMENT & DID	OPR	DOC DATE	REMARKS	RECOMMENDATIONS
WSMR User Hdbk		26 Feb 71	Not an HFAC Document. Not a DODISS document.	Delete from page I-64 of AMSDL.
DI-A-1012	-TE	15 Feb 69	Not HFAC. Appears on p I-181 of the AMSDL under SAFT.	Delete from Page I-64 of the AMSDL.
DI-H-1327A		04 Jun 71	Not HFAC.	Delete from Page I-64 of the AMSDL.
DI-S-3622	-10	26 Feb 71	Not HFAC.	Delete from Page I-64 of the AMSDL.
AFR 80-46	AS	01 Nov 71	Not a DODISS Document. PSS program has been superseded. OPR designation appears to be in error.	Delete from page I-65 of the AMSDL.
DI-H-3051	-11	01 Nov 71	PSS Program no longer active	Delete from page I-65 of the AMSDL.
AFSC DH 2-2(3)	-11	01 Nov 79	Not a DODISS Document.	Delete from page I-65 of the AMSDL.
DI-H-3264A		01 Nov 71		If need for DID is current, determine appropriate tasking document.
AR 70-10	DCSRDA	21 Jul 71	Not a DODISS Document.	Delete from page I-65 of the AMSDL.
DI-T-1917		02 May 77	Not HFAC.	Delete from Page I-65 of the AMSDL.
ATCM 375-1		09 Feb 77	Not a DODISS Document.	Delete from Page I-65 of the AMSDL.
DI-H-3251	-10	01 Nov 71	Duplicate of entry under AFR 80-46	Delete from Page I-65 of the AMSDL.
To be determined	AS		No tasking document.	Delete from Page I-65 of the AMSDL.
UDI-H-21392	AS	14 Mar 75		Delete from Page I-65 of the AMSDL.

Table VII. ANALYSIS OF HFAC DATA ITEM DESCRIPTIONS (DIDS) (Concluded)

DOCUMENT & DID	OPR	DOC DATE	REMARKS	RECOMMENDATIONS
MIL-STD-740-1	SH	30 Dec 86	A current DODISS document	No change
DI-T-23731A	AS	31 May 77	Not HFAC	Delete from 1 Jan 87 update sheet
DI-HFAC-80270 thru -80272	SH	30 Dec 86	Current DIDS	No changes
MIL-STD-740-2	SH	30 Dec 86	A current DODISS document.	No change
DI-T-23731A	SH	31 May 77	Not HFAC	Delete from 1 Jan 87 update sheet
DI-HFAC-80271	SH	30 Dec 86	Current DID	No change
DI-HFAC-80273 and -80274	SH	30 Dec 86	Current DID	No change
MIL-STD-1794	-14	01 Oct 86	A current DODISS document.	No change
DI-HFAC-80240 thru -80243	-14	01 Oct 86	Current DIDs	No changes

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SECTION III. OTHER RELATED ACTIONS

A. HUMAN FACTORS STANDARDIZATION STEERING COMMITTEE (HFSSC)

The HFSSC was organized to provide technical guidance for the planning of the HFAC Program and to insure successful coordinated efforts involved in implementing this HFAC Plan. The HFSSC addresses current and potential standardization and related actions involving documents within the HFAC Plan and focuses on technical aspects. The HFSSC also functions as the Human Factors Standardization Sub-Technical Advisory Group (TAG) of the DoD Human Factors Engineering TAG, chartered by the Assistant Secretaries (R&D) of the Army, Navy and Air Force. This function was established by the DoD HFE TAG during its third meeting, convened at Fairborn, Ohio, 22-24 August 1978.

The HFSSC is not a working level group, but a planning and coordinating committee established to:

-Advise the HFAC Lead Standardization Activity's Agent regarding programs which should be included in revisions of the HFAC Standardization Program Plan.

-Identify key participants for carrying out cooperative projects established by the HFAC Plan.

-Review results of projects such as EPS where a specification, standard or handbook is not a coordinated deliverable end product.

-Make distribution of the HFAC Program Plan to applicable technical organizations within the services, i.e., distribution additional to the standardization and industry group recipients.

-Periodically advise the DoD HFE TAG on HFAC accomplishments, status and plans, and obtain inputs from the DoD HFE TAG.

-Maintain liaison with industry groups and professional societies.

The HFSSC is, intentionally, kept at a minimum size and meets only twice a year. Members are expected to coordinate with applicable personnel of the technical and management communities within their Services so that interests of the Services, individually and as a whole, can be harmoniously and economically reflected in planning actions. The Chairman is responsible for integrating recommended actions into revisions of the HFAC Program Plan.

Composition of the HFSSC is limited to members, industry liaison representatives and advisors, as follows:

1. Members include a) the chairman who is the HFAC Lead Standardization Activity's Agent, responsible for preparation of the DoD HFAC Program Plan, b) one human engineering and life support representative from each service, c) one personnel and training representative from each service and, d) ex-officio members who are technical principals on key HFAC projects or responsible for maintaining technical principals on HFAC projects or responsible for maintaining technical content of HFAC documents but who are not otherwise represented.

2. Industry Liaison Representatives include those individuals who have been appointed by industry groups having an interest in planning and technical issues of the HFAC program to provide advice and viewpoints representative of their groups.

3. Advisors include the a) HFAC Standardization Project Officers from the Lead Standardization Activity and the two Participating Activities, b) HFAC proponent from the Defense Standardization Program Office, c) NASA participant, d) health/medical participant and, e) others as designated by the Chairman.

While Manpower/Personnel/Training (MPT), as related to acquisition of logistics support, was placed under the ILSS standardization and data category areas by the DODISS and AMSDL in 1985, continued representation of MPT interests on the HFSSC was considered to be advisable because of the interaction between human engineering and MPT in most acquisition programs. MPT constraints drive HFE requirements; human engineering design then drives subsequent MPT programs.

Professional Society/Industry Groups actively participate on a voting basis, in the HFSSC, functioning in review and advisory capacities. Current Professional Society/Industry Group liaison representation is as follows:

-Aerospace Industries Association of America (AIA)
-Electronic Industries Association (EIA)
-National Security Industrial Association (NSIA)
-Human Factors Society (HFS)
-American Institute of Industrial Engineers (AIIE)

B. AIRCREW STATION STANDARDIZATION PANEL (ASSP)

The ASSP has provided technical expertise to development of specifications and standards via DoD/industry cooperative efforts since the 1940's.

As a result of the 97th ASSP meeting, five ad hoc working groups were established, efforts were initiated to develop new criteria for audio displays for inclusion in MIL-STD-411 and MIL-STD-1472, as applicable, and to generally continue providing technical expertise to maintenance of current and new aircrew station specifications and standards. Since the 97th meeting, the ASSP has continued its update efforts on the above-cited documents plus MIL-STD-1333 and MIL-STD-850. The 100th meeting, conducted at NASA-Ames Research Center, Moffett Field, California, hosted by the U.S. Army Aviation Systems Command, 7-10 October 1985, continued efforts on these HFAC interest documents.

C. VISUAL DISPLAY TERMINAL (VDT) WORKPLACE CRITERIA

MIL-STD-1472C does not currently contain specific VDT workplace criteria, although some related coverage exists in the areas of general workspace, lighting, CRT design and other similar topics which apply to VDTs as well as other items. In 1983, the Human Factors Society (HFS) started to organize a secretariat and establish an ANSI committee to develop guidelines for ergonomic design of VDT workplaces. At the time this Plan was being prepared the committee had developed a draft standard to be submitted to ANSI for approval, probably in mid to late 1987. Upon approval the standard will be reviewed for citation, in whole or in part, by MIL-STD-1472 and for possible adoption.

D. HUMAN ENGINEERING DESIGN FOR MAINTAINABILITY

Several years ago, the Pacific Missile Test Center (PMTC) undertook, by contract, a review of maintainer requirements in US Navy Aircraft Acquisition. This review was accomplished pursuant to subcontract 6SB-79-C-0159 of Contract N00123-79-C-0159 and comprised a critical review of section 5.9 of MIL-STD-1472C from the user's viewpoint. A report of findings was prepared, 30 Jun 83, by McDonnell Douglas Astronautics Company. Based on these findings, Xyzyx Information Corporation, under contract to PMTC, prepared 30 Jun 84, a proposed refinement and update to section 5.9 of MIL-STD-1472C. During 1986, the recommended refinement was assessed by the Tri-service Technical Group for MIL-STD-1472 and structured into a proposed section change. The draft has already been reviewed by the technical group and will be included as part of a proposed "D" revision of MIL-STD-1472 as soon as possible after conclusion of Project HFAC-0030.

E. MIL-PRIME

The MIL-PRIME Program, being undertaken by Aeronautical Systems Division (ASD), AFSC, has as its objective the development of specifications and standards expressing operational needs and interface requirements; providing built in tailoring; furnishing general criteria values; and ensuring requirements verifications by test, analysis and inspection. Perhaps the most apparent feature of the MIL-PRIME concept is the use of a generic document to specify product requirements as specific provisions developed by filling in blanks to tailor values to a specific acquisition. Guidance for users includes rationale for requirements, standard criteria and lessons learned. The MIL-PRIME effort started the first quarter of FY76 with a study effort. While the MIL-PRIME concept is not used by Army and Navy or by Air Force organizations outside ASD, a number of documents provide topical coverage in subjects typifying the HFAC area and are therefore of interest to non-MIL-PRIME users from the standpoint of a) structuring of potential new HFAC documents and b) state-of-the-art coverage that might be adopted by conventional HFAC standards. For this reason, the Human Factors related documents of the MIL-PRIME Program are being monitored by the HFSSC with ASD providing MIL-PRIME updates at HFSSC meetings as required. Topical coverage, irrespective of completion status, includes human engineering, human/computer interface, display symbology, lighting equipment, instructor operator system, sound pressure levels in aircraft, and aircrew stations.

F. SECONDARY DOCUMENTS

Secondary documents--those specifications and standards, having relevance to but outside of the HFAC standardization area--are reviewed by the HFAC Lead Standardization Activity as such documents are generated or revised to ensure that conflicting or extensively duplicative requirements are avoided.

G. USER/COMPUTER INTERFACE GUIDELINES

DOD-HDBK-761, Human Engineering Guidelines for Management Information Systems, was published in June 1985. The State-of-the-art changes and considerable development of additional User/Computer Interaction (U/CI) guidelines require a revision of DOD-HDBK-761, to remain reasonably current with

such developments. Accordingly, the U/CI Sub-Technical Advisory Group (STAG) of the DOD HFE TAG is currently developing material that can be used to update DOD-HBDK-761. The Human Engineering Laboratory is serving as the action organization for the U/CI STAG in this regard, to prepare a coordination draft DOD-HDBK-761A by the first quarter of FY88. After a brief technical review by the U/CI STAG and the Tri-service Human Factors Standardization Steering Committee, the draft is expected to be submitted for formal revision project.

H. COMMERCIAL HUMAN ENGINEERING DESIGN CRITERIA

Based on the Navy's desire to use commercial specifications and standards where possible, Naval Sea Systems Command (NAVSEA) Human Engineering Branch initiated an ASTM human engineering design standard, which will be used when NAVSEA designs Military Sealift Command ships (designed to commercial standards) and some other Navy ships. Once approved the ASTM standard will be referenced instead of MIL-STD-1472, where appropriate. Presently, the ASTM standard is in draft form and has been sent to the ASTM F-25 (Shipbuilding Standards) Committee members for balloting.

SECTION IV. INDIVIDUAL STANDARDIZATION TASKS

Detail analyses for each individual standardization task or project are contained in the task sheets of this section. Each task sheet is identified by task number, title and project number. The task number is an arbitrary identifier selected by the lead service activity used strictly to facilitate identification within the program plan. Task number coding is explained at the beginning of Section II.

The task sheets are arranged in HFAC category sequence as follows:

H1: Human Engineering Tasking Documents

H2: Human Engineering Design Criteria & Related

H3: Acoustic Noise Limits

H4: HFAC Management, General Reviews & Related

H5: Personnel/Training Tasking Documents

Completed programs are not included in this section.

TASK IDENTIFICATION: H1-87-1

DOCUMENT NO. & DATE: MIL-STD-XXXX

TITLE: Task Analysis

PROJECT NO.: HFAC-0013

PREPARING ACTIVITY: Army Missile Command (MI)

CUSTODIANS: Naval Air Systems Command (AS)
Aeronautical Systems Division (11)

MILESTONES: PLANNED

Initiate Project:	April 1987
Initial Draft:	July 1987
Coordination:	December 1987
Final Draft:	April 1988

PROBLEM/ISSUE/OPPORTUNITY:

All services use "task analysis" in the design and development of new systems, their hardware and procedures, as well as the training and logistic support for those systems. The variety of approaches to task analysis reflects a lack of uniformity, frequently making the undertaking of a task analysis by a contractor a difficult effort in terms of determining the content, degree of detail and perhaps form and focus for use by different functions (design, procedures development, training, test and evaluation, manning, etc.). A unified, comprehensive, tailorable statement regarding the conduct of task analysis which can be used on multi-service, multi-product, and multi-discipline bases.

OBJECTIVE/PURPOSE:

Prepare MIL-STD-XXXX, Task Analysis and minimum essential data item descriptions.

PERFORMING ACTIVITY: U.S. Army Human Engineering Laboratory

RESOURCES:

Two man-months (technical); two man-months (standardization)

APPLICABLE DIDS:

DI-H-7055	Analysis of Critical Tasks (may be cancelled)
DI-HFAC-XXXXX	Task Inventory Report
DI-HFAC-XXXXX	Task Analysis Report

TASK IDENTIFICATION: H1-87-2

DOCUMENT NO. & DATE: MIL-STD-XXXX

TITLE: Human Engineering Requirements for Measurement and Analysis of Operator Workload

PROJECT NO.: HFAC-00

COORDINATING ACTIVITY: Aeronautical Systems Division, AFSC (11)

CUSTODIANS: US Army Missile Command (MI)
Naval Air Systems Command (AS)

MILESTONES: PLANNED

Initiate Project:	September 1987
Initial Draft:	December 1987
Coordination:	May 1988
Final Draft:	September 1988

PROBLEM/ISSUE/OPPORTUNITY:

Current workload measurement and analysis requirements (e.g., one sentence in MIL-H-46855) are not sufficient to express needed task and data provisions for workload assessment during proposal preparation, system analysis, system design, testing and other acquisition activities.

OBJECTIVE/PURPOSE:

Prepare MIL-STD-XXXX, "Human Engineering Requirements for Measurement and Analysis of Operator Workload," and applicable data item descriptions.

PERFORMING ACTIVITY: Armstrong Aerospace Medical Research Laboratory

RESOURCES:

Two man-months (technical); One man-month (standardization effort)

APPLICABLE DIDS:

TBD

TASK IDENTIFICATION: H2-87-1

DOCUMENT NO. & DATE: MIL-STD-1472C, 2 May 1981

TITLE: Human Engineering Design Criteria for Military Systems, Equipment and Facilities

PROJECT NO.: HFAC-00

PREPARING ACTIVITY: U.S. Army Missile Command (MI)

CUSTODIANS: U.S. Naval Air Systems Command (AS)
Aeronautical Systems Division, AFSC (11)

MILESTONES: PLANNED

Initiate Project:	September 1987
Initial Draft:	January 1988
Coordination:	June 1988
Final Draft:	September 1988

PROBLEM/ISSUE/OPPORTUNITY:

Several years ago, the Pacific Missile Test Center (PMTC) undertook, by contract, a review of maintainer requirements in U.S. Navy Aircraft Acquisition. PMTC subsequently developed the findings into proposed changes to section 5.9 (Design for Maintainability) of MIL-STD-1472. These changes were refined by the Tri-service Technical Group for MIL-STD-1472. The resulting prospective update of section 5.9 of MIL-STD-1472 is sufficient to serve as a basis for revision of the standard, including merge of three change notices and consideration of user changes since mid 1986.

OBJECTIVE/PURPOSE:

Prepare and coordinate MIL-STD-1472D.

PERFORMING ACTIVITY: Human Engineering Laboratory Detachment-MICOM

RESOURCES:

Four man-months (technical); one man-month (Standardization)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H2-87-3

DOCUMENT NO. & DATE: MIL-STD-1280, 28 January 1969

TITLE: Keyboard Arrangements

PROJECT NO: HFAC-00

PREPARING ACTIVITY: Army Communications-Electronics Command (CR)

CUSTODIANS: Naval Sea Systems Command (SH)
Aeronautical Systems Division, AFSC (11)

MILESTONES: PLANNED

Initiate Project:	June 1987
Initial Draft:	August 1987
Coordination:	December 1987
Final Draft:	March 1988

PROBLEM/ISSUE/OPPORTUNITY:

A need exists to standardize numeric keypad arrangements. An engineering practice study, conducted under HFAC-0019, defined such standard arrangement which should be incorporated into MIL-STD-1280.

OBJECTIVE/PURPOSE:

Prepare a change notice to MIL-STD-1280 to incorporate standard numeric keypad arrangement.

RESOURCES:

One man-month (standardization effort)

APPLICABLE DIDS:

None

TASK IDENTIFICATION: H3-80-1

DOCUMENT NO. & DATE: ANSI S3.2-1960

TITLE: Monosyllabic Word Intelligibility, Method for Measurement of

PROJECT NO.: HFAC-00

COORDINATING ACTIVITY: Aeronautical Systems Division, AFSC (11)

CUSTODIANS: US Army Missile Command (MI)
US Naval Air Systems Command (AS)

MILESTONES:

Initiate Project:	August 1987
Circulate Standard:	TBD by -11
Coordination:	TBD by -11
Acceptance Notice:	NLT August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S3.2 is referenced by MIL-STD-1472C, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S3.2

RESOURCES:

Two man-months (standardization effort)

APPLICABLE DIDS:

TBD.

TASK IDENTIFICATION: H3-80-2

DOCUMENT NO. & DATE: ANSI S1.1-1960

TITLE: Acoustical Terminology

PROJECT NO.: HFAC-00

COORDINATING ACTIVITY: Naval Sea Systems Command (SH)

CUSTODIANS: US Army Missile Command (MI)
Aeronautical Systems Division, AFSC (11)

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	TBD by -SH
Coordination:	TBD by -SH
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S1.1 is referenced by MIL-STD-740B and MIL-STD-1474B, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S1.1

RESOURCES:

Two man-months (standardization effort)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-80-5

DOCUMENT NO. & DATE: ANSI S1.2

TITLE: Physical Measurement of Sound, Method for the

PROJECT NO.: HFAC-

COORDINATING ACTIVITY: Naval Sea Systems Command (SH)

CUSTODIANS: US Army Missile Command (MI)
Aeronautical Systems Division, AFSC (11)

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	TBD by -SH
Coordination:	TBD by -SH
Acceptance Notice;	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S1.2 is referenced by MIL-STD-740B and MIL-STD-1474B, but is not listed in DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S1.2

RESOURCES:

Two man-months (standardization effort)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-80-6

DOCUMENT NO. & DATE: ANSI/SAE J986b-1976

TITLE: Sound Level for Passenger Cars and Light Trucks

PROJECT NO.: HFAC:A

COORDINATING ACTIVITY: US Army Tank-Automotive Command (AT)

CUSTODIANS:

MILESTONES: PLANNED

Initiate Project:	TBD by -AT
Circulate Standard:	TBD by -AT
Coordination:	TBD by -AT
Acceptance Notice:	NLT August 1988

PROBLEM/ISSUE:

ANSI/SAE J986 is referenced by MIL-STD-1474B, to specify a test procedure, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI/SAE J986b Test Procedure

RESOURCES:

Two man-months (standardization effort)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-80-8

DOCUMENT NO. & DATE: ANSI S3.5-1969

TITLE: Articulation Index, Methods for the Calculation of

PROJECT NO.: HFAC-00

COORDINATING ACTIVITY: Aeronautical Systems Division, AFSC (11)

CUSTODIANS: US Army Missile Command (MI)
US Naval Air Systems Command (AS)

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	TBD by -11
Coordination:	TBD by -11
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S3.5 is referenced by MIL-STD-1472C, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S3.5

RESOURCES:

Two man-months (standardization effort)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-81-1

DOCUMENT NO. & DATE: ANSI S1.4

TITLE: Sound Level Meters, Specification for

PROJECT NO.: HFAC-

COORDINATING ACTIVITY: US Naval Sea Systems Command (SH)

CUSTODIANS: US Army Missile Command (MI)
Aeronautical Systems Division, AFSC (11)

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	TBD by -SH
Coordination:	TBD by -SH
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S1.4 is referenced by MIL-STD-740B, MIL-STD-1472C and MIL-STD-1474B, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S1.4

RESOURCES:

Two man-months (standardization effort)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-81-2

DOCUMENT NO. & DATE: ANSI/SAE J1074-1974

TITLE: Engine Sound Level Measurement Procedures

PROJECT NO.: HFAC-A

COORDINATING ACTIVITY: US Army Tank Automotive Command (AT)

CUSTODIANS:

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	TBD by -AT
Coordination:	TBD by -AT
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI/SAE J1074 is referenced by MIL-STD-1474B, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI/SAE J1074 Test Procedures.

RESOURCES:

Two man-months (standardization effort)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-81-3

DOCUMENT NO. & DATE: ANSI S1.6-1967

TITLE: Preferred Frequencies and Band Numbers for Acoustical Measurements

PROJECT NO.: HFAC-

COORDINATING ACTIVITY: US Naval Sea Systems Command (SH)

CUSTODIANS: US Army Missile Command (MI)
Aeronautical Systems Division, AFSC (11)

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	TBD by -SH
Coordination:	TBD by -SH
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S1.6 is referenced by MIL-STD-740B, MIL-STD-1472C and MIL-STD-1474B, but is not listed in DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S1.6

RESOURCES:

Two man-months (standardization effort)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-81-4

DOCUMENT NO. & DATE: ANSI S1.8

TITLE: Preferred Reference Quantities for Acoustic Levels

PROJECT NO: HFAC-0033

COORDINATING ACTIVITY: US Army Missile Command (MI)

CUSTODIANS: Aeronautical Systems Division, AFSC (11)
Naval Sea Systems Command (SH)

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	October 1987
Coordination:	January 1988
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S1.8 is referenced by MIL-STD-1474B, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S1.8

RESOURCES:

Two man-months (standardization)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-81-5

DOCUMENT NO. & DATE: ANSI S1.10

TITLE: Calibration of Microphones, Method for the

PROJECT NO: HFAC-0034

COORDINATING ACTIVITY: US Army Missile Command (MI)

CUSTODIANS: Aeronautical Systems Division, AFSC (11)
Naval Sea Systems Command (SH)

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	October 1987
Coordination:	January 1988
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S1.10 is referenced by MIL-STD-1474B, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S1.10

RESOURCES:

Two man-months (standardization)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-81-6

DOCUMENT NO. & DATE: ANSI S1.11

TITLE: Octave, Half-Octave, and Third-Octave Filter Sets, Specifications for

PROJECT NO: HFAC-

COORDINATING ACTIVITY: US Army Aviation Systems Command (AV)

CUSTODIANS: Aeronautical Systems Division, AFSC (11)
Naval Sea Systems Command (SH)

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	TBD by -11
Coordination:	TBD by -11
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S1.11 is referenced by MIL-STD-1294 and MIL-STD-1474B, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S1.11

RESOURCES:

Two man-months (standardization)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-81-7

DOCUMENT NO. & DATE: ANSI S1.13

TITLE: Sound Pressure Levels, Method for the Measurement of

PROJECT NO: HFAC-

COORDINATING ACTIVITY: US Army Aviation Systems Command (AV)

CUSTODIANS: Aeronautical Systems Division, AFSC (11)
Naval Sea Systems Command (SH)

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	TBD by -11
Coordination:	TBD by -11
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S1.13 is referenced by MIL-STD-1294 and MIL-STD-1474B, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S1.13

RESOURCES:

Two man-months (standardization)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-81-8

DOCUMENT NO. & DATE: ANSI S1.21

TITLE: Methods for Determination of Sound Power Levels of Small Sources in Reverberant Rooms

PROJECT NO: HFAC-

COORDINATING ACTIVITY: Naval Sea Systems Command (SH)

CUSTODIANS: US Army Missile Command (MI)
Aeronautical Systems Division, AFSC (11)

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	TBD by -SH
Coordination:	TBD by -SH
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S1.21 is referenced by MIL-STD-740B and MIL-STD-1474B, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S1.21

RESOURCES: Two man-months (standardization)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-81-9

DOCUMENT NO. & DATE: ANSI S6.1

TITLE: Qualifying a Sound Data Acquisition System

PROJECT NO: HFAC-

COORDINATING ACTIVITY: US Army Aviation Systems Command (AV)

CUSTODIANS: Aeronautical Systems Division, AFSC (11)
Naval Sea Systems Command (SH)

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	TBD by -AV
Coordination:	TBD by -AV
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S6.1 is referenced by MIL-STD-1294 and MIL-STD-1474B, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S6.1

RESOURCES:

Two man-months (standardization)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-82-1

DOCUMENT NO. & DATE: ANSI S2.2

TITLE: Calibration of Shock and Vibration Pickups, Methods for the

PROJECT NO.: HFAC-

COORDINATING ACTIVITY: US Naval Sea Systems Command (SH)

CUSTODIANS:

MILESTONES: PLANNED

Initiate Project:	August 1987
Circulate Standard:	TBD by -SH
Coordination:	TBD by -SH
Acceptance Notice:	August 1988

PROBLEM/ISSUE/OPPORTUNITY:

ANSI S2.2 is referenced by MIL-STD-740B, but is not listed in the DODISS as an adopted industry standard.

OBJECTIVE/PURPOSE:

Adoption of ANSI S2.2

RESOURCES:

Two man-months (standardization effort)

APPLICABLE DIDS:

None.

TASK IDENTIFICATION: H3-85-1

DOCUMENT NO. & DATE: MIL-STD-1474C (Proposed)

TITLE: Noise Limits for Military Ground Materiel

PROJECT NO: HFAC-

PREPARING ACTIVITY: US Army Missile Command (MI)

CUSTODIANS: Naval Air Systems Command (AS)
Aeronautical Systems Division, AFSC (11)

MILESTONES: PLANNED

Initiate Project:	August 1987
Initial Draft:	October 1987
Coordination:	January 1988
Final Draft:	May 1988

PROBLEM/ISSUE/OPPORTUNITY:

A need exists to review the present standard to incorporate the suggested changes and additions received since the last revision and change notice. Potential Navy and Air Force Custodians will be requested to study MIL-STD-1474C for the purpose of elevation to a fully-coordinated standard covering noise limits for ground systems. Technical coordination will be effected to insure mutual compatibility of criteria, instrumentation, test methods and evaluation rationale, identify changes required to provide such compatibility and, if required, resolve critical problems which may arise to impair the consolidation of requirements. The HEL Detachment-MICOM will serve as Agent for the Preparing Activity.

OBJECTIVE/PURPOSE:

Revise MIL-STD-1474 and convert, if possible, a limited-coordination military standard to a coordinated military standard.

PERFORMING ACTIVITY: Human Engineering Laboratory Detachment-MICOM

RESOURCES:

Technical:	10 man-months
Standardization:	1 man month

APPLICABLE DIDS:

DI-H-1336

TASK IDENTIFICATION: H3-86-1

DOCUMENT NO. & DATE: MIL-STD-XXXX

TITLE: Physical Ear Noise Attenuation Testing

PROJECT NO: HFAC-0032

PREPARING ACTIVITY: Natick Research and Development Center (GL)

CUSTODIANS: Naval Air Systems Command (AS)
Aeronautical Systems Division (11)

MILESTONES: PLANNED

Initiate Project:	June 1987
Initial Draft:	June 1987
Coordination:	
Final Draft:	December 1987

PROBLEM/ISSUE/OPPORTUNITY:

Establishment of methodology and instrumentation requirements for quality assurance testing of hearing protective devices for noise attenuation characteristics is needed.

OBJECTIVE/PURPOSE:

Prepare and coordinate a Military Standard, subject as above.

RESOURCES:

Technical:	man-months
Standardization:	man month

APPLICABLE DIDS:

TBD.

TASK IDENTIFICATION: H3-87-1

DOCUMENT NO. & DATE: SAE HIR 1622A

TITLE: Noise Control in Fluid Power Systems of Marine Vehicles

PROJECT NO: HFAC-0035

COORDINATING ACTIVITY: Naval Sea Systems Command (Ordnance Systems)

CUSTODIANS:

MILESTONES: PLANNED

Initiate Project:	June 1987
Initial Draft:	TBD by -OS
Coordination:	TBD by -OS
Final Draft:	June 1988

PROBLEM/ISSUE/OPPORTUNITY:

Adoption of the latest version of this document, originally adopted under project HFAC-0026, is needed to reflect the current issue.

OBJECTIVE/PURPOSE:

Adoption of SAE HIR 1622A.

RESOURCES:

Two man-months (standardization effort)

APPLICABLE DIDS:

None

TASK IDENTIFICATION: H5-87-1

DOCUMENT NO. & DATE: Multiple

TITLE: Manpower, Personnel, and Training (MPT) Data Requirements and Tasking Documents Engineering Practice Study (EPS)

PROJECT NO: HFAC-0036

COORDINATING ACTIVITY: U.S. Army Missile Command

CUSTODIANS:

MILESTONES: PLANNED

Initiate Project:	July 1987
EPS Report:	June 1989
Coordination:	October 1989

PROBLEM/ISSUE/OPPORTUNITY:

A prior EPS on MPT Data Requirements and Tasking Documents (HFAC-0009), disclosed a multiplicity of MPT data item descriptions (DIDs), noted that a large number of MPT DIDs appear to be outdated, confirmed that many MPT DIDs do not reference any tasking document or improperly reference tasking documents, and observed that MPT DIDs may be found in several standardization/ data areas.

OBJECTIVE/PURPOSE:

Conduct an EPS to identify actions required to reduce the number of MPT DIDs identified by HFAC-0009 and authorized since preparation of the HFAC-0009 report, consolidate tasking documents for these DIDs, and strengthen the linkage between the DIDs and their tasking documents.

PERFORMING ACTIVITY: U.S. Army Research Institute for the Behavioral and Social Sciences

RESOURCES:

48 man-months (technical); 2 man-months (standardization)

APPLICABLE DIDS:

Multiple.

APPENDIX A

ABBREVIATIONS AND ACRONYMS

ADS	Aeronautical Design Standard
AAMRL	Armstrong Aerospace Medical Research Laboratory
AFR	Air Force Regulation
AFSC	Air Force Systems Command
AIA	Aerospace Industries Association of America
AIIE	American Institute of Industrial Engineers
AMC	US Army Materiel Command
AMETA	Army Management Engineering Training Activity
AMSDL	Acquisition Mgt Systems & Data Requirements Control List
ANSI	American National Standards Institute
AR	Army Regulation
ARI	Army Research Institute for the Behavioral & Social Sciences
-AS	US Naval Air Systems Command
-AT	US Army Tank-Automotive Command
-AV	US Army Aviation Research & Development Command
BMO or -14	Ballistic Missile Office (AFSC)
BUMEDINST	Bureau of Medicine & Surgery Instruction (Navy)
CFR	Code of Federal Regulations
CNET	Chief, Naval Education and Training
DARCOMR	Army Materiel Development & Readiness Command Regulation
DDMO	Defense Data Management Office
DH	Design Handbook
DID	Data Item Description
DMSSO	Defense Materiel Specifications and Standards Office (now DDMO, DPSO, and DSPO)
DoD	Department of Defense
DoDD	Department of Defense Directive
DODISS	Department of Defense Index of Specification & Standards
DPSO	Defense Product Standards Office
DSPO	Defense Standardization Program Office
DSSP	Defense Standardization & Specification Program
EDHAG	Engineering Design Handbook Advisory Group
EIA	Electronic Industries Association
-11	Air Force Aeronautical Systems Division, AFSC
EPS	Engineering Practice Study
GAO	General Accounting Office
-GL	U.S. Army Natick Research & Development Center
HE	Human Engineering
HEL	U.S. Army Human Engineering Laboratory
HFAC	Human Factors (Standardization Area)
HFE	Human Factors Engineering
HFS	Human Factors Society
HFSSC	Tri-service Human Factors Standardization Steering Committee
HFTE	Human Factors Test & Evaluation
ICBM	Intercontinental Ballistic Missile
ILSS	Integrated Logistic Support Standards (Standardization Area)
ISO	International Organization for Standardization

LS	Life Support
-ME	U.S. Army Belvoir Research, Development and Engineering Center
MICOM or -MI	U.S. Army Missile Command
MPT	Manpower, Personnel, and Training
NADC	Naval Air Development Center
NAMRL	U.S. Naval Aerospace Medical Research Laboratory
NAVMAT	U.S. Naval Materiel Command
NSIA	National Security Industrial Association
NLT	No Later Than
OSHA	Occupational Safety & Health Administration
OUSDRE	Office of the Under Secretary of Defense, Research & Engineering
P&T	Personnel & Training
R&D	Research & Development
RD&E	Research, Development & Engineering
SAE	Society of Automotive Engineers
-SH	US Naval Sea Systems Command
STAG	Sub-Technical Advisory Group
TAG	Technical Advisory Group
TBD	To Be Determined
TB MED	Technical Bulletin, Medical (Army)
TC	Technical Committee
TRADOC	US Army Training and Doctrine Command
U/CI	User/Computer Interface
UDI	Unique Data Item
WCC	Workload Coordinating Committee

APPENDIX 3

HFAC Project Listing by Project Number

HFAC	TITLE	TASK
0001	MIL-STD-1472C, Notice 1	H2-78-1
0002	MIL-H-46855 T&E Provisions EPS	H1-77-1
0003	Consolidation of Human Engineering DIDs EPS	H1-77-2
0004	MIL-H-46855B and DIDs	H1-78-2
0005	Modern Control/Displays & Standard Parts EPS	H2-79-1
0006	MIL-STD-1472C	H2-80-1
0007	MIL-STD-1474B Full Coordination EPS	H3-79-1
0008	Associated Document EPS	H4-79-1
0009	Personnel/Training DIDs EPS	H5-84-1
0010	Directory of HFE Specialists	H4-79-2
0011	HFAC Secondary Documents EPS	H4-78-1
0012	DOD-HDBK-743	H2-79-3
0013	MIL-STD-XXXX, Task Analysis	H1-87-1
0014	SAE J185, Access Systems	H2-80-4
0015	Hum Eng Des Crit for Pers-Computer Interface EPS	H2-81-1
0016	MIL-STD-1294	H3-81-1
0017	MIL-STD-1280, change PA and place in HFAC area	H2-81-2
0018	MIL-H-46855B, Amendment 1	H1-82-1
0019	MIL-STD-1280, EPS on Numeric Keypads	H2-83-3
0020	MIL-STD-1280, EPS on Keyboard Arrangements	H2-83-4
0021	MIL-STD-1472C, Notice 1	H2-83-1
0022	MIL-STD-1472C, Notice 2	H2-83-6
0023	MIL-H-46855B, Amendment 2	H1-84-1
0024	DOD-HDBK-761	H2-83-7

HFAC	TITLE	TASK
0025	MIL-STD-783D (Convert from MISC to HFAC Area)	H2-85-2
0026	SAE HIR 1622 Adoption	H3-84-2
0027	Human Engineering Procedures Guide EPS	H1-85-1
0028	SAE J925 Adoption	H2-80-5
0029	SAE J88 Adoption	H3-80-3
0030	MIL-STD-1472C, Notice 3	H2-86-1
0031	DOD-HDBK-763	H1-86-1
0032	MIL-STD-XXXX, Physical Ear Noise Attenuation Testing	H3-86-1
0033	ANSI S1.8 Adoption	H3-81-4
0034	ANSI S1.10 Adoption	H3-81-5
0035	SAE HIR 1622A, Noise Cont in Fluid Pwr Sys of Marine Veh	H3-87-1
0036	Manpwr, Pers, and Tng Data Rqmts for Mil Sys EPS	H5-87-1
TBD	MIL-STD-1472D	H2-87-2
A001	MIL-STD-1474A, Notice 1	H3-78-1
A002	MIL-HDBK-759A	H2-80-2
A003	MIL-STD-1473A, Validation	H2-80-3
A004	MIL-STD-1474A Full Coordination EPS	H3-77-1
A005	MIL-STD-1474B	H3-78-2
A006	MIL-HDBK-759, Noice 1	H2-79-2
A007	MIL-STD-1295	H2-79-4
A008	MIL-STD-1474B, Notice 1	H3-80-9
A009	MIL-STD-1473A, Notice 1	H2-83-2
A010	DOD-STD-1477, Symbols for Army AD System Displays	H2-83-5
A011	DOD-STD-1477, Notice 1	H2-83-8
A012	MIL-STD-1295A	H2-83-9

HFAC	TITLE	TASK
A013	MIL-STD-1474B, Notice 2	H3-84-1
A014	MIL-HDBK-759A, Notice 1	H2-85-3
F001	Not Assigned	
F002	MIL-STD-1794, HFE and Mgt for ICBM Systems	H1-84-2
F003	MIL-STD-1787	H2-85-1
F004	MIL-STD-1787, Notice 1	H2-86-2
F005	MIL-STD-1800	H2-87-1
N001	MIL-STD-740B/1	H3-80-1
N002	MIL-STD-740B/2	H3-80-1
N003	MIL-STD-740/1	H3-85-2
N004	MIL-STD-740/2	H3-85-3
MISC		
OC80	MIL-H-46855A, Amendment 1	H1-78-1
N212Sh	MIL-STD-740C (Converted to HFAC-N001 and N002)	H3-72-1
6625		
--	SAE J366	(H3-80-4)

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APPENDIX C

HFAC Project Listing by Task Number

TASK	TOPIC	HFAC
H1-77-1	MIL-H-46855 T&E Provisions EPS	0002
H1-77-2	Consolidation of Human Engineering DIDs EPS	0003
H1-78-1	MIL-H-46855A, Amendment 1	0C80 (MISC)
H1-78-2	MIL-H-46855B and DIDs	0004
H1-79-1	MIL-STD-XXXX, Task Analysis	0013
H1-82-1	MIL-H-46855B, Amendment 1	0018
H1-84-1	MIL-H-46855B, Amendment 2	0023
H1-84-2	MIL-STD-1794	F002
H1-85-1	Human Engineering Procedures Guide EPS	0027
H1-86-1	DOD-HDBK-763	0031
H1-87-1	MIL-STD-XXXX, Task Analysis	0013
H1-87-2	MIL-STD-XXXX, H.E. Reqts for Meas & Anal of Op Workload	00
H2-78-1	MIL-STD-1472B, Notice 2	0001
H2-79-1	Modern Control/Displays & Standard Parts EPS	0005
H2-79-2	MIL-HDBK-759, Notice 1	A006
H2-79-3	DOD-HDBK-743	0012
H2-79-4	MIL-STD-1295	A007
H2-80-1	MIL-STD-1472C	0006
H2-80-2	MIL-HDBK-759A	A002
H2-80-3	MIL-STD-1473A, Validation	A003
H2-80-4	SAE J185	0014
H2-80-5	SAE J925	0028
H2-81-1	HE Des Crit for Pers-Computer Interface EPS	0015

TASK	TOPIC	HFAC
H2-81-2	MIL-STD-1280, change PA and place in HFAC Area	0017
H2-83-1	MIL-STD-1472C, Notice 1	0021
H2-83-2	MIL-STD-1473A, Notice 1	A009
H2-83-3	MIL-STD-1280, EPS on Numeric Keypads	0019
H2-83-4	MIL-STD-1280, EPS on Keyboard Arrangements	0020
H2-83-5	DOD-STD-1477, Symbols for Army AD System Displays	A010
H2-83-6	MIL-STD-1472C, Notice 2	0022
H2-83-7	DOD-HDBK-761	0024
H2-83-8	DOD-STD-1477, Notice 1	A011
H2-83-9	MIL-STD-1295A	A012
H2-85-1	MIL-STD-1784	F003
H2-85-2	MIL-STD-783D (Convert from MISC to HFAC Area)	0025
H2-85-3	MIL-HDBK-759A, Notice 1	A0014
H2-86-1	MIL-STD-1472C, Notice 3	0030
H2-86-2	MIL-STD-1787, Notice 1	F004
H2-87-1	MIL-STD-1800	F005
H2-87-2	MIL-STD-1472D	
H2-87-3	MIL-STD-1280	
H2-88-1	MIL-STD-1280	
H3-72-1	MIL-STD-740C (Converted to H3-80-10 and -11)	N212Sh
H3-77-1	MIL-STD-1474A Full Coordination EPS	A004
H3-78-1	MIL-STD-1474A, Notice 1	A001
H3-78-2	MIL-STD-1474B	A005
H3-79-1	MIL-STD-1474B Full Coordination EPS	0007
H3-80-1	ANSI S3.2	

TASK	TOPIC	HFAC
H3-80-2	ANSI S1.1	
H3-80-3	SAE J88	0029
H3-80-4	SAE J366b	FSC6625
H3-80-5	ANSI S1.2	
H3-80-6	SAE J986	
H3-80-8	ANSI S3.5	
H3-80-9	MIL-STD-1474B, Notice 1	A008
H3-80-10	MIL-STD-740B/1	N001
H3-80-11	MIL-STD-740B/2	N002
H3-81-1	ANSI S1.4	
H3-81-2	SAE J1074	
H3-81-3	ANSI S1.6	
H3-81-4	ANSI S1.8	
H3-81-5	ANSI S1.10	
H3-81-6	ANSI S1.11	
H3-81-7	ANSI S1.13	
H3-81-8	ANSI S1.21	
H3-81-9	ANSI S6.1	
H3-81-10	MIL-STD-1294A	0016
H3-82-1	ANSI S2.2	
H3-84-1	MIL-STD-1474B, Notice 2	A013
H3-84-2	SAE HIR 1622 Adoption	0026
H3-85-1	MIL-STD-1474C	
H3-85-2	MIL-STD-740/1	N003

TASK	TOPIC	HFAC
H3-85-3	MIL-STD-740/2	N004
H3-86-1	MIL-STD-XXXX, Physical Ear Noise Attenuation Testing	0032
H3-87-1	SAE HIR 1622A, Noise Cont in Fluid Pwr Sys of Marine Veh	0035
H4-78-1	HFAC Secondary Documents EPS	0011
H4-79-1	Associated Document EPS	0008
H4-79-2	Directory of HFE Specialists	0010
H5-79-1	Personnel/Training DIDs EPS	0009
H5-84-1	" " " "	0009
H5-87-1	Manpwr, Pers & Tng Data Rqmts for Mil Sys EPS	0036

APPENDIX D

AMSDL HFAC AREA DOCUMENT LISTING

DEPARTMENT OF DEFENSE
ACQUISITION INFORMATION ANALYSIS AREAS
(UPDATED AS OF 86 OCTOBER 01)
(# = SOURCE DOCUMENT CANCELLED/SUPERSEDED)

PROGRAM AREA: HFAC SYSTEM DOCUMENTS
HUMAN FACTORS

DOCUMENT NR	TITLE	OPR	APPROVAL AMSC	DOCDATE
MIL-H-46855B(2)	HUMAN ENGINEERING REQUIREMENTS FOR MILITARY SYSTEMS, EQUIPMENT AND FACILITIES	A/MI	A3058	05APR84
DI-H-7051	HUMAN ENGINEERING PROGRAM PLAN	A/DRSMI		01JUN79
DI-H-7052	HUMAN ENGINEERING DYNAMIC SIMULATION PLAN	A/DRSMI		01JUN79
DI-H-7053	HUMAN ENGINEERING TEST PLAN	A/DRSMI		01JUN79
DI-H-7054	HUMAN ENGINEERING SYSTEM ANALYSIS REPORT	A/DRSMI		01JUN79
DI-H-7055	CRITICAL TASK ANALYSIS REPORT	A/DRSMI		01JUN79
DI-H-7056	HUMAN ENGINEERING DESIGN APPROACH DOCUMENT-OPERATOR	A/DRSMI		01JUN79
DI-H-7057	HUMAN ENGINEERING DESIGN APPROACH DOCUMENT-MAINTAINER	A/DRSMI		01JUN79
DI-H-7058	HUMAN ENGINEERING TEST REPORT	A/DRSMI		01JUN79
DI-H-7059	HUMAN ENGINEERING PROGRESS REPORT	A/DRSMI		01JUN79
UDI-H-22274B	REPORT, SPEECH INTELLIGIBILITY TEST	N/ELEX-813		01JUL76
UDI-E-2556I	TRAINER CONFIGURATION REPORT	N/NTEC-N-22		15DEC75
MIL-STD-740B + NOTICE 1	AIRBORNE AND STRUCTUREBORNE NOISE MEASUREMENTS AND ACCEPTANCE CRITERIA OF SHIPBOARD EQUIPMENT	N/ESSD-93	N1603	22JUN65
UDI-T-23756	DESCRIPTIONS, SET-UP, COMPONENT SHOP NOISE TEST	N/SEA-55N		01APR72
UDI-T-23760	SUMMARY, SHOP NOISE TEST RESULTS	N/SEA-55N		01APR72
UDI-T-23764	REPORT, COMPONENT SHOP NOISE TESTS	N/SEA-55X13		01APR72
MIL-STD-1294A	ACOUSTICAL NOISE LIMITS IN HELICOPTERS	A/AV	A3242	12AUG85
DI-H-7130	NOISE CONTROL MEASURES REPORT (HELICOPTERS)	A/AV	A3437	18JAN85
DI-H-7131	NOISE LEVEL ASSESSMENT REPORT (HELICOPTERS)	A/AV	A3438	18JAN85
MIL-STD-1333A + NOTICE 1	AIRCREW STATION GEOMETRY FOR MILITARY AIRCRAFT	N/ESSD-93	N2348	21NOV77
MIL-STD-1472C + NOTICE 2	HUMAN ENGINEERING DESIGN CRITERIA FOR MILITARY SYSTEMS, EQUIPMENT AND FACILITIES	A/MI	A3158	10MAY84
UDI-E-22128A	DATA, DESIGN OF EQUIPMENT CONSOLES	N/PME-110-2		29MAY74
UDI-H-22274B	REPORT, SPEECH INTELLIGIBILITY TEST	N/ELEX-813		01JUL76
UDI-E-2556I	TRAINER CONFIGURATION REPORT	N/NTEC-N-22		15DEC75
MIL-STD-1474B	NOISE LIMITS FOR ARMY MATERIEL	A/ARMY	A3115	18JUN79
DI-H-1336	NOISE MEASUREMENT REPORT	A/DRSMI		29JUL80
AFR 161-2	AEROSPACE SYSTEMS MANAGEMENT - MEDICAL	F/SGPR	F2015	08JUN70
AFSC DH 1-3(1)	HUMAN FACTORS ENGINEERING	F/SDD	F1831	01JAN77
DI-H-3253	QUALITATIVE AND QUANTITATIVE PERSONNEL REQUIREMENTS INFORMATION (QQPRI), PART I: FIELD AND ORGANIZATION MAINTENANCE	F/AFSC		24AUG70
DI-H-3271	SYSTEM EXERCISING PROBLEM PACKAGE	F/AFSC		21MAY71

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DOCUMENT NR.	TITLE	OPR	APPROVAL AMSC	DOCDATE
NAVMED P-5010-5	MANUAL OF NAVAL PREVENTIVE MEDICINE	N/BUMED	N2267	10OCT72
SAMSOR 127-7 DI-S-30562A	SAFETY STANDARDS AND OPERATING PROCEDURES	F/SAMSO F/BMO/AW	F2237	24MAY73 20JAN83
WSMR USER HDBK DI-A-1012 DI-H-1327A DI-S-3622	DOCUMENTS REQUIRED BY NATIONAL RANGES SURFACE DANGER AREA DATA MISSILE FLIGHT SAFETY DATA, RANGE SAFETY	A/ARMY A/DRSTE A/DRCSF F/AFSC	A2600	26FEB71 15DEC69 04JUN71 26FEB71

RELATED SYSTEMS (APPLICABLE OIDS ONLY)
(# = SOURCE DOCUMENT CANCELLED/SUPERSEDED)
PROGRAM AREA: HFAC

DOCUMENT NR	TITLE	OPR	APPROVAL AMSC	DOCDATE
#AFR 80-46		N/AIR	F2289	01NOV71
DI-H-3251	PERSONNEL SUBSYSTEM/HUMAN FACTORS DEVELOPMENT PLAN (HFDP)	F/AFSC		01NOV71
AFSC DH 2-2 THIRD EDITION	CREW STATIONS AND PASSENGER ACCOMODATIONS	F/ASD/ENESS	F3069	01NOV79
DI-H-3264A	CREW STATION AND ESCAPE SUBSYSTEMS DESIGN AND DESCRIPTIVE DATA	F/AFSC		01NOV71
AR 70-10	TEST AND EVALUATION DURING DEVELOPMENT AND ACQUISITION OF MATERIEL	A/DCSRDA	A1490	21JUL71
DI-T-1917	NOTIFICATION OF TEST POSTURE	A/USACC		02MAY77
#ATCM 375-1		F/ATC	F2141	09FEB77
DI-H-3251	PERSONNEL SUBSYSTEM/HUMAN FACTORS DEVELOPMENT PLAN (HFDP)	F/AFSC		01NOV71
TO BE DETERMINED	NAVAIR			
UDI-H-21392	REPORT, SPECIFIC BEHAVIORAL OBJECTIVES (LIMITED TO NACF)	N/AIR-413		14MAR75

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DEPARTMENT OF DEFENSE
ACQUISITION INFORMATION ANALYSIS AREAS
(UPDATED AS OF 87 JAN 01)
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PROGRAM AREA: HFAC SYSTEM DOCUMENTS
RUMAN FACTORS

	DOCUMENT NR	TITLE	OPR	APPROVAL AMSC	DOCDATE
!MIL-STD-740-1(SH)		AIRBORNE SOUND MEASUREMENTS AND ACCEPTANCE CRITERIA OF SHIPBOARD EQUIPMENT	N/SR	N4008	30DEC86
	DI-T-23731A	NOTIFICATION OF TESTS	N/SEA-61X1		31MAY77
!	DI-HFAC-80270	EQUIPMENT AIRBORNE SOUND MEASUREMENT PLAN	N/SH	N4010	30DEC86
!	DI-HFAC-80271	SOUND TEST FAILURE NOTIFICATION AND RECOMMENDATIONS REPORT	N/SH	N4011	30DEC86
!	DI-RFAC-80272	EQUIPMENT AIRBORNE SOUND MEASUREMENTS TEST REPORT	N/SH	N4012	30DEC86
!MIL-STD-740-2(SH)		STRUCTUREBORNE VIBRATORY ACCELERATION MEASUREMENTS AND ACCEPTANCE CRITERIA OF SHIPBOARD EQUIPMENT	N/SH	N4009	30DEC86
	DI-T-23731A	NOTIFICATION OF TESTS	N/SEA-61X1		31MAY77
!	DI-RFAC-80271	SOUND TEST FAILURE NOTIFICATION AND RECOMMENDATIONS REPORT	N/SH	N4011	30DEC86
!	DI-HFAC-80273	EQUIPMENT STRUCTUREBORNE VIBRATORY ACCELERATION MEASUREMENT PLAN	N/SH	N4013	30DEC86
!	DI-HFAC-80274	EQUIPMENT STRUCTUREBORNE VIBRATION ACCELERATION MEASUREMENTS TEST REPORT	N/SH	N4014	30DEC86
!MIL-STD-1794(USAF)		RUMAN FACTORS ENGINEERING PROGRAM FOR INTERCONTINENTAL BALLISTIC MISSILE SYSTEMS	F/AF-14	F3967	01OCT86
!	DI-HFAC-80240	HUMAN FACTORS DEVELOPMENT PLAN	F/AF-14	F3968	01OCT86
!	DI-HFAC-80241	HUMAN FACTORS TECRNICAL REPORT	F/AF-14	F3969	01OCT86
!	DI-RFAC-80242	HUMAN FACTORS DESIGN ANALYSIS REPORT	F/AF-14	F3970	01OCT86
!	DI-RFAC-80243	PERSONNEL PLANNING REPORT	F/AF-14	F3971	01OCT86

! = CHANGED SINCE LAST ISSUE OF AMSDL

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